



## **DEPARTMENT OF THE INTERIOR**

### **Fish and Wildlife Service**

#### **50 CFR Part 17**

**[Docket No. FWS-R4-ES-2013-0108]**

**[4500030114]**

**RIN 1018-AZ64**

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Brickellia mosieri* (Florida Brickell-bush) and *Linum carteri* var. *carteri* (Carter's Small-flowered Flax)**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for *Brickellia mosieri* (Florida brickell-bush) and *Linum carteri* var. *carteri* (Carter's

small-flowered flax) under the Endangered Species Act of 1973, as amended (Act). We designate as critical habitat approximately 1,062 hectares (ha) (2,624 acres (ac)) for *B. mosieri* and approximately 1,072 ha (2,649 ac) for *L. c. var. carteri*. The critical habitat areas for these plants, located entirely in Miami-Dade County, Florida, largely overlap, for a combined total of approximately 1,095 ha (2,706 ac). Critical habitat for both plants includes both occupied and unoccupied habitat. The Service determined that the unoccupied units are essential for the conservation of the plants, to provide for the necessary expansion of current *Brickellia mosieri* and *Linum carteri* var. *carteri* populations, and for reestablishment of populations into areas where these plants previously occurred. The effect of this regulation is to extend the Act's protections to these plants' critical habitats.

**DATES:** This rule is effective on [**INSERT DATE 30 DAYS AFTER DATE OF  
FEDERAL REGISTER PUBLICATION**].

**ADDRESSES:** This final rule is available on the internet at <http://www.regulations.gov> and from the South Florida Ecological Services Field Office. Comments and materials we received, as well as some supporting documentation we used in preparing this final rule, are available for public inspection at <http://www.regulations.gov>. All of the comments, materials, and documentation that we considered in this rulemaking are available by appointment, during normal business hours at: U.S. Fish and Wildlife Service, South Florida Ecological Services Field Office, 1339 20th Street, Vero Beach, FL 32960; by telephone 772-562-3909; or by facsimile 772-562-4288. Persons who

use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

The coordinates or plot points or both from which the maps were generated are included in the administrative record for this critical habitat designation and are available at <http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0108, and at the South Florida Ecological Services Field Office (<http://www.fws.gov/verobeach/>) (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we developed for this critical habitat designation will also be available at the Fish and Wildlife Service website and Field Office addresses provided above, and at <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** Dana Hartley, Endangered Species Supervisor, U.S. Fish and Wildlife Service, South Florida Ecological Services Field Office, 1339 20th Street, Vero Beach, FL 32960; by telephone 772–562–3909; or by facsimile 772–562–4288. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

## **SUPPLEMENTARY INFORMATION:**

### **Executive Summary**

***Why we need to publish a rule.*** Under the Act, when we list a species as endangered or

threatened, we must designate critical habitat, to the maximum extent prudent and determinable. Designations of critical habitat can only be completed by issuing a rule.

We listed *Brickellia mosieri* and *Linum carteri* var. *carteri* as endangered species on September 4, 2014 (79 FR 52567). On October 3, 2013, we published in the **Federal Register** a proposed critical habitat designation for *B. mosieri* and *L. c.* var. *carteri* (78 FR 61293). Section 4(b)(2) of the Act states that the Secretary shall designate critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat.

The critical habitat areas we are designating in this rule constitute our current best assessment of the areas that meet the definition of critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri*. Here we are designating approximately 1,062 ha (2,624 ac) as critical habitat for *Brickellia mosieri* and approximately 1,072 ha (2,649 ac) for *Linum carteri* var. *carteri*. The critical habitat areas for these plants, located entirely in Miami-Dade County Florida, largely overlap, for a combined total of approximately 1,095 ha (2,706 ac). Critical habitat for both plants includes both occupied and unoccupied habitat. The Service determined that the unoccupied units are essential for the conservation of the plants, to provide for the necessary expansion of current *Brickellia mosieri* and *Linum carteri* var. *carteri* populations, and for reestablishment of populations into areas where these plants previously occurred.

***This rule consists of:*** A final rule designating critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri* under the Act.

***We have prepared an economic analysis of the designation of critical habitat.*** We have prepared an analysis of the economic impacts of the critical habitat designations and related factors. We announced the availability of the draft economic analysis (DEA) in the **Federal Register** on July 15, 2014 (79 FR 41211), allowing the public to provide comments on our analysis. We have incorporated the comments and have completed the economic analysis concurrently with this final designation.

***Peer review and public comment.*** We sought comments from independent specialists to ensure that our designation is based on scientifically sound data and analyses. We obtained opinions from five knowledgeable individuals with scientific expertise to review our technical assumptions and analysis, and whether or not we had used the best available information. These peer reviewers generally concurred with our methods and conclusions, and provided additional information and suggestions to improve this final rule. Information we received from peer review is incorporated in this final revised designation. We also considered all comments and information received from the public during the comment periods.

## **Previous Federal Actions**

For more information on previous Federal actions concerning *Brickellia mosieri*

and *Linum carteri* var. *carteri*, refer to the proposed rules published in the **Federal Register** on October 3, 2013 (78 FR 61273 and 78 FR 61293), and the final listing rule published in the **Federal Register** on September 4, 2014 (79 FR 52567), which are available online at <http://www.regulations.gov> or from the South Florida Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Summary of Comments and Recommendations**

We requested written comments from the public on the proposed designation of critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri* during two comment periods. The first comment period opened with the publication of the proposed rule (78 FR 61293) on October 3, 2013, and closed on December 2, 2013. We also requested comments on the proposed critical habitat designation and associated draft economic analysis during a comment period that opened July 15, 2014, and closed on August 14, 2014 (79 FR 41211). We also contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during these comment periods.

During the first comment period, we received 10 comment letters directly addressing the proposed critical habitat designation. During the second comment period, we received six comment letters addressing the proposed critical habitat designation. We did not receive any requests for a public hearing during either comment period. All substantive information provided during the comment periods specifically relating to the

proposed designation either has been incorporated directly into this final designation or is addressed below.

### *Peer Review*

In accordance with our peer review policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we solicited expert opinions from six knowledgeable individuals with scientific expertise, that included familiarity with *Brickellia mosieri* and *Linum carteri* var. *carteri* and/or their habitat, biological needs, and threats; the geographical region of South Florida in which these plants occur; and conservation biology principles. We received responses from five of the peer reviewers.

We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri*. The peer reviewers generally concurred with our methods and conclusions, and provided additional information and suggestions to improve the final critical habitat rule. Peer reviewer comments are addressed in the following summary and incorporated into the final rule as appropriate.

(1) *Comment*: One peer reviewer requested that additional information be provided regarding the source of ownership data and conservation lands. This reviewer also requested that ownership data and conservation land boundaries be referenced on the critical habitat maps or additional maps.

*Our Response:* Ownership of proposed critical habitat areas in the proposed rule was determined using geographic information system (GIS) data consisting of Miami-Dade County parcel layer (August 2008 version) and the Florida Natural Areas Inventory (FNAI) Florida Managed Areas layer (March 2009 version). Ownership of critical habitat areas in this final rule was determined using updated GIS data consisting of Miami-Dade County parcel layer (July 2013 version) and FNAI Florida Managed Areas layer (March 2014 version); this information has been incorporated into Tables 1 and 2 in the **Final Critical Habitat Designation** section, below. With regard to the inclusion of ownership data and conservation area boundaries on critical habitat maps, we prepare these maps under the parameters for publication within the Code of Federal Regulations. While we attempted in the proposed rule to provide detail such as select area names to better show the location of critical habitat areas along the Miami Rock Ridge, the scale of the maps prevented all conservation areas or ownership data from being depicted. This is still the case for maps showing the final critical habitat designation, which retained the same scale as maps in the proposed rule. More detailed information is available at the South Florida Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

(2) *Comment:* One peer reviewer suggested that the FNAI Florida Element Occurrence (FLEO) data for the pine rockland natural community and rare plants, animals, and invertebrates could have been used in our designation of critical habitat units. The reviewer also commented on the lack of map references to these and other spatial occurrence data (from Fairchild Tropical Botanic Garden (FTBG), the Institute for



Regional Conservation (IRC), and other sources), while allowing that the latter were well referenced in the proposed rule.

*Our Response:* We appreciate the reviewer's comment. We did review the FLEO data for rare pine rockland species as part of our analysis, and have added text reflecting this under the *Criteria Used To Identify Critical Habitat* section, below. We were not aware of available FLEO data for the pine rockland natural community. We have since inquired with FNAI regarding these data, and have found out that the information available is only for some, not all, pine rocklands on the Miami Rock Ridge, and that detailed data (e.g., habitat condition, species occurrences) for most areas are at least 10 years old. Thus, we believe that the information we used in our critical habitat analysis (specifically, recent aerial photography and the feedback of experts familiar with on-the-ground conditions) is more appropriate to a current assessment of habitat conditions than the FLEO pine rockland data, and constitutes the best available scientific and commercial information. Please refer to our response to *Comment (1)*, above, regarding the inclusion of additional information on critical habitat maps.

(3) *Comment:* One peer reviewer recommended including the fire-suppressed pine rockland habitat located between Ross and Castellow Hammocks in *Brickellia mosieri*'s designated critical habitat, based on it being the type locality for the plant.

*Our Response:* In our analysis of proposed critical habitat, some areas of former pine rockland habitat were considered too severely fire suppressed (i.e., having extremely dense canopy cover, based on our assessment of aerial photography) such that they are now unsuitable habitat for *Brickellia mosieri*, and unlikely to be able to be restored.

These areas were not delineated as pine rocklands in our critical habitat analysis, and thus were not included in the consequence matrix used to identify unoccupied habitat for designation. This included the severely fire-suppressed pine rockland between Ross and Castellow Hammocks. Our assessment has been confirmed by a species expert who conducts monitoring in the area and is familiar with current habitat conditions. Thus, we believe that the subject area is not appropriate for inclusion in the critical habitat designation at this time.

(4) *Comment:* One peer reviewer noted that our methodology and choice of critical habitat patches appear very reasonable, but suggested supporting future critical habitat designations with quantitative analyses, such as those that would provide the quantitative contribution of each patch to network connectivity.

*Our Response:* We appreciate the reviewer's comment. In our analysis for the proposed rule, we evaluated connectivity of each habitat patch using two criteria: the number of other pine rockland habitat patches within 2 kilometers (km) (1.2 miles (mi)), and the distance to the nearest pine rockland patch within a 2-km (1.2-mi) radius (where a score of "0" signaled adjacent patches). In this quantitative ranking, scores for both of these criteria were calculated in GIS using the pine rockland habitat layer we previously delineated as described in the *Criteria Used To Identify Critical Habitat* section, below. By applying these criteria, given areas of equal habitat quality, size, and surrounding landscape composition, those patches having more and closer neighbors (i.e., other pine rockland patches) would be ranked higher in our evaluation. The intent of these criteria was to maximize patch connectivity within each geographic area. We believe this was

the best approach for delineating the critical habitat for these two plants, but appreciate that the reviewer's suggested evaluation approach may be useful in developing a consequence matrix in future critical habitat designations, where necessary and appropriate.

(5) *Comment:* One peer reviewer suggested adding many of the mowed fields within the U.S. Coast Guard (USCG) and Miami Zoo properties to the designated critical habitat in Unit 4 (now, Units BM4 and LCC4). The reviewer stated that these lack a pine canopy and shrub layer, but support a high diversity of pine rockland species, including State-listed and federally listed plants, and noted that similar mowed areas likely occur in other portions of the Richmond Pinelands. We received a similar comment, concerning a mowed area on the USCG property, during the second public comment period (see response to Comment (10) below).

*Our Response:* We thank the reviewer for this comment. We acknowledge that mown areas having pine rockland substrate (i.e., cleared pine rocklands) support some imperiled pine rockland plants, including *Linum carteri* var. *carteri*. However, while cleared areas currently support occurrences of *L. c.* var. *carteri*, scientific data are lacking with regard to the reason for this—whether it be a requirement related to very high light conditions, disturbed substrate, or a combination of these or other factors not yet identified. For the long-term conservation of these plants, we consider habitats having a completely open canopy (i.e., cleared pine rocklands) to be less preferred than intact pine rockland having suitable canopy cover. Accordingly, cleared areas scored lower quantitatively for onsite habitat quality than intact pine rockland, and thus had a lower

overall ranking in our consequence matrix, which we used to evaluate the conservation quality of unoccupied habitat (discussed in the *Criteria Used To Identify Critical Habitat* section, below). Mown fields within USCG and Miami Zoo lands, and surrounding land in the Richmond Pinelands, were included in our evaluation, but did not rank high enough (i.e., conservation quality ranking was less than 0.50) for inclusion in the critical habitat designation. Based on our assessment, we do not believe these areas are essential to the plant's conservation at this time. However, we are actively communicating with both USCG and Miami-Dade County, and are supportive of conservation measures that would benefit *L. c. var. carteri* on these lands (e.g., optimizing mowing regime).

(6) *Comment:* One peer reviewer provided additional information related to cultivated plantings of *Brickellia mosieri*, citing an observation of larger, more vigorous individuals than their wild counterparts, and the potential for plantings of both *B. mosieri* and *Linum carteri* var. *carteri* to provide a continual input of propagules that may successfully colonize other pine rockland areas.

*Our Response:* We thank the reviewer for this additional information, and support such planting programs (e.g., FTBG's Connect to Protect Network) to aid in the recovery of these plants.

#### *Comments from States*

Section 4(i) of the Act (16 U.S.C. 1531 et seq.) states, "the Secretary shall submit to the State agency a written justification for [her] failure to adopt regulations consistent

with the agency's comments or petition.” The two plants only occur in Florida, and we received no comments from the State of Florida regarding the critical habitat proposal. We note, however, that one peer reviewer was from the Florida Forest Service, Florida Department of Agriculture and Consumer Services; those comments are addressed above.

#### *Public Comments*

(7) *Comment:* One commenter stated that there is no reason why a population of *Brickellia mosieri* could not be supported at Tropical Park (in the vicinity of Unit BM1).

*Our Response:* We thank the reviewer for this comment. In our evaluation of unoccupied habitat, we used the best available scientific data to establish a minimum habitat size that would likely support a sustaining population of *Brickellia mosieri*. Based on expert opinion, we excluded unoccupied patches below 2 ha (5 ac) for *B. mosieri* (see “Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring,” in the proposed critical habitat rule published in the **Federal Register** on October 3, 2013 (78 FR 61293)). The pine rockland habitat patch at Tropical Park (unoccupied) is approximately 1.7 ha (4.3 ac), and thus was not included in the consequence matrix for *B. mosieri*. Although some sites occupied by *B. mosieri* are less than 2 ha (5 ac) in size, it is not known whether these populations are sustainable in the long term. Thus, we believe that our minimum size threshold for unoccupied habitat is a conservative estimate, and that the methodology we used to determine proposed critical habitat supports the identification of pine rockland habitat patches with the highest

conservation quality.

(8) *Comment:* Two commenters suggested revising the criteria used to evaluate onsite habitat quality in the consequence matrix, which was used to score and rank unoccupied pine rockland habitat patches in our critical habitat analysis. Both commenters stated that it would be more appropriate (especially for *Linum carteri* var. *carteri*) for pine rockland with a canopy openness greater than 50 percent to score higher than pine rockland with 25–50 percent canopy openness.

*Our Response:* We appreciate the comment and acknowledge that *Linum carteri* var. *carteri* responds favorably to high light conditions, including disturbed pine rocklands with canopy openness near 100 percent. Such cleared areas currently support occurrences of *L. c.* var. *carteri*, but scientific data are lacking with regard to the reason for this—whether it be a requirement related to very high light conditions, disturbed substrate, or a combination of these or other factors not yet identified. The criteria used to evaluate onsite habitat quality reflect our belief that habitats having a completely open canopy (i.e., cleared pine rocklands) are less preferred than intact pine rockland having suitable canopy cover for the long-term conservation of these plants. However, to investigate whether and how the suggested change to scoring would impact the set of unoccupied habitat patches having an overall score greater than 0.50, we conducted a test revision of the consequence matrix for *L. c.* var. *carteri*. Scoring of canopy cover was adjusted as follows: if canopy was estimated to be 50 to 75 percent open, that patch received the highest possible score for that criteria (i.e., a “4”; original score for these

patches was a “3”); patches with a canopy estimated to be greater than 75 percent open received a score of “3” (original score was a “2”); patches with a canopy estimated to be 25 to 50 percent open received a score of “2” (original score was a “4”); and patches with a canopy estimated to be less than 25 percent open (e.g., having a closed canopy due to inadequate fire management and extensive cover by nonnative invasive plants) received the lowest possible score (“1”; unchanged from original scoring). We then compared these test patch rankings to rankings under the original scoring scheme. All habitat patches for *L. c. var. carteri* in the original matrix having a total score greater than 0.63 were still in the revised set. Based on total score greater than 0.50 (our chosen cut-off for conservation quality as discussed in the *Criteria Used To Identify Critical Habitat* section, below), the revised set of unoccupied habitat patches for *L. c. var. carteri* included 3 new patches, but did not include 28 previously included patches (compared to proposed critical habitat in the proposed rule published in the **Federal Register** on October 3, 2013 (78 FR 61293)). The net area difference, based on the revised versus original matrix, was approximately 101 ha (250 ac) less than the proposed critical habitat. We also evaluated the revised set of habitat patches spatially, and determined that the revised polygon set had reduced connectivity, particularly in the area between the U.S. Department of Agriculture’s Chapman Field (on the coast) and more interior habitat to the southwest. Lastly, we evaluated aerial photography of the individual polygons that would be added, and do not believe that they represent quality habitat—as pine rockland habitat in general, or for *L. c. var. carteri* specifically. Evaluation of aerial photography of the individual polygons that would be deleted indicates that at least some of these areas represent high-quality pine rockland habitat, including areas that could be open

enough for *L. c. var. carteri*.

Based on our test revision, it seems apparent that a lower cut-off value for conservation quality would be needed to capture these high-quality areas and achieve adequate connectivity if the revised scoring was used. Therefore, we do not believe that the suggested scoring revision would result in a more appropriate set of habitat patches for *L. c. var. carteri*, and thus have not made any changes to the consequence matrix.

One reason that the revised scoring did not result in the anticipated improvement to proposed critical habitat for *L. c. var. carteri* may be due to the way in which we scored patch canopy cover—that is, the entire polygon received a single score for canopy cover, although in many cases canopy cover is not distributed evenly through a habitat patch. While there are likely many alternative methods for evaluating conservation quality of pine rockland habitat, peer reviewers of the proposed rule agreed that our methodology is sound and that the resulting determination for unoccupied critical habitat is appropriate.

(9) *Comment:* One commenter suggested technical corrections to sections of the proposed rule pertaining to characteristic pine rockland vegetation, related to scientific names.

*Our Response:* We appreciate the comment and have incorporated these corrections into the *Physical or Biological Features*, the *Primary Constituent Elements*, and the **Regulation Promulgation** sections of the final rule, below.



(10) *Comment:* One commenter stated that the “antenna field” area of mowed pine rockland bordered on the north by Coral Reef Drive (152<sup>nd</sup> Street) and on the east by SW 117<sup>th</sup> Street would support both *Brickellia mosieri* and *Linum carteri* var. *carteri*, and that it is possible that one or both plants are there already. The commenter further stated that, although the area has been mown for decades, the vegetation is primarily native pine rockland plants that have adapted to the mowing by growing prostrate instead of vertically.

*Our Response:* Please see our response to Peer Review Comment (5), above, with regard to how these areas were handled in the methodology for designation. In addition, a survey of this area has recently been conducted, and neither *Brickellia mosieri* nor *Linum carteri* var. *carteri* were found. However, we continue to actively communicate with both USCG and Miami-Dade County, and are supportive of conservation measures that would benefit pine rockland plants on these lands (e.g., optimizing mowing regime).

### **Summary of Changes from Proposed Rule**

Based on information we received in comments regarding *Brickellia mosieri* and *Linum carteri* var. *carteri*, we refined our description of physical or biological features and primary constituent elements for both plants to include corrections to the following scientific names, in order to more accurately describe the characteristic vegetation of pine rocklands on the Miami Rock Ridge:

- (1) *Lysiloma bahamense* has been changed to *L. latisiliquum*;
- (2) *Thrinax morrisii* has been deleted;

- (3) *Rapanea punctata* has been changed to *Myrsine floridana*;
- (4) *Dodonaea viscosa* has been deleted;
- (5) *Quercus elliotii* has been changed to *Q. pumila*;
- (6) *Chamaecrista fasciculata* has been changed to *C. deeringiana*; and
- (7) *Zamia pumila* has been changed to *Z. integrifolia*.

These revisions have also been made in the critical habitat discussion as well as in the **Regulation Promulgation** section of this final rule.

We also made revisions and refinements of the proposed critical habitat designation, and described these amendments in our document making available the draft economic analysis and reopening the proposed rule's comment period (79 FR 41211; July 15, 2014). Please refer to that notice for details; those revisions, with the exception of the proposed additions on Department of Defense lands, are reflected in this final rule, and described below in *Criteria Used To Identify Critical Habitat*.

Since publishing the revised proposed critical habitat designation on July 15, 2014(79 FR 41211), we have determined that three unoccupied areas on Department of Defense lands (Homestead Air Reserve Base and the Special Operations Command South Headquarters) meet the criteria for exemption from critical habitat designation under section 4(a)(3) of the Act (discussed under the **Exemptions** section, below), and we have removed these from this final designation. The exemptions result in the removal of one area (one subunit; approximately 5.2 ha (12.9 ac)) from the critical habitat designation for *Brickellia mosieri*, and three areas (two subunits; totaling approximately 7.0 ha (17.3 ac))

from the critical habitat designation for *Linum carteri* var. *carteri*. The amount of critical habitat designated for each plant in this final rule (1,062 ha (2,624 ac) for *B. mosieri* and 1,072 ha (2,649 ac) for *L. c.* var. *carteri*) reflects these exempted areas.

## **Critical Habitat**

### *Background*

Critical habitat is defined in section 3 of the Act as:

- (1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features
  - (a) Essential to the conservation of the species, and
  - (b) Which may require special management considerations or protection; and
- (2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and

transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations

identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish

procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to insure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of

the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

#### *Physical or Biological Features*

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features (PBFs) essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the

historical, geographical, and ecological distributions of a species.

We derive the specific PBFs essential for *Brickellia mosieri* and *Linum carteri* var. *carteri* from studies of the plants' habitat, ecology, and life history as described in the **Critical Habitat** section of the proposed rule to designate critical habitat published in the **Federal Register** on October 3, 2013 (78 FR 61293), and in the information presented below. Additional information can be found in the final listing rule published in the **Federal Register** on September 4, 2014 (79 FR 52567). The PBFs for *Brickellia mosieri* and *Linum carteri* var. *carteri* were defined on the basis of the habitat features of the areas occupied by the plants at the time of listing, which included substrate types, plant community structure, and associated plant species. The PBFs below include an updated description of the PBF related to "Cover or Shelter." We have determined that *B. mosieri* and *L. c.* var. *carteri* require the following PBFs:

#### Space for Individual and Population Growth

*Brickellia mosieri* and *Linum carteri* var. *carteri* are endemic to, and occur exclusively within, pine rockland habitat on the Miami Rock Ridge outside of Everglades National Park (ENP) in Miami-Dade County in south Florida. This community and associated native plant species are described in the **Status Assessment for *Brickellia mosieri* and *Linum carteri* var. *carteri*** section in the proposed listing rule published in the **Federal Register** on October 3, 2013 (78 FR 61273). Pine rocklands are a fire-maintained ecosystem characterized by an open canopy and understory and by a



limestone substrate (often exposed). Open canopy conditions are required to allow sufficient sunlight to reach the herbaceous layer and permit growth and flowering of *B. mosieri* and *L. c. var. carteri*. These plants also require a limestone substrate to provide suitable growing conditions (e.g., pH, nutrients, anchoring, and proper drainage). This combination of ecosystem characteristics (i.e., open canopy and limestone substrate) occurs only in pine rockland habitats (as opposed to rockland hammock, which occurs in conjunction with pine rockland and has a limestone substrate but a closed canopy). Therefore, based on this information, we identify pine rockland habitats to be a PBF for these plants.

#### Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

*Soils*—Substrates supporting *Brickellia mosieri* and *Linum carteri* var. *carteri* for anchoring or nutrient absorption are composed of oolitic limestone that is at or very near the surface. Solution holes occasionally form where the surface limestone is dissolved by organic acids. There is typically very little soil development, consisting primarily of accumulations of low-nutrient sand, marl, clayey loam, and organic debris found in solution holes, depressions, and crevices on the limestone surface (FNAI 2010, p. 62). However, extensive sandy pockets can be found at the northern end of the Miami Rock Ridge, beginning from approximately North Miami Beach and extending south to approximately S.W. 216 Street (which runs east-west approximately one-half mile south of Quail Roost Pineland) (Service 1999, p. 3-162). In this area (the northern Biscayne region), pine rockland soils are primarily quartz sands classified as Opalocka sand-rock

outcrop complex. This region has the least exposed rock. In the southern Biscayne, or Redlands, region to the south, pine rockland soils are rockier (i.e., exposed rock is the predominant surface) and are primarily classified as Cardsound silty clay loam-rock outcrop complex. Other soil types that are loosely associated with pine rocklands include Udorthents (in the northern half of the plants' current ranges) and Krome very gravelly loam (in the southern half). Therefore, based on the information above, we identify substrate derived from oolitic limestone to provide anchoring and nutritional requirements to be a PBF for these plants.

#### Cover or Shelter

Pine rockland is characterized by an open canopy of *Pinus elliottii* var. *densa* (South Florida slash pine). Subcanopy development is rare in well-maintained pine rocklands, with only occasional hardwoods such as *Lysiloma latisiliquum* (wild tamarind) and *Quercus virginiana* (live oak) growing to tree size in Miami Rock Ridge pinelands (Snyder *et al.* 1990, p. 253). The shrub/understory layer is also characteristically open, although the height and density of the shrub layer varies based on fire frequency, with understory plants growing taller and more dense as time since fire increases.

Subcanopy/shrub species that typically occur include, but may not be limited to, *Serenoa repens* (saw palmetto), *Sabal palmetto* (cabbage palm), *Coccothrinax argentata* (silver palm), *Myrica cerifera* (wax myrtle), *Myrsine floridana* (myrsine), *Metopium toxiferum* (poisonwood), *Byrsonima lucida* (locustberry), *Tetrazygia bicolor* (tetrazygia), *Guettarda scabra* (rough velvetseed), *Ardisia escallonioides* (marlberry), *Psidium longipes*

(mangroveberry), *Sideroxylon salicifolium* (willow bustic), and *Rhus copallinum* (winged sumac) (FNAI 2010, pp. 61–62). Short-statured shrubs may include, but are not limited to, *Quercus pumila* (running oak), *Randia aculeata* (white indigoberry), *Crossopetalum ilicifolium* (Christmas berry), *Morinda royoc* (redgal), and *Chiococca alba* (snowberry) (FNAI 2010, p. 62). Understory vegetation may include, but is not limited to: *Andropogon* spp.; *Schizachyrium gracile*, *S. rhizomatum*, and *S. sanguineum* (bluestems); *Aristida purpurascens* (arrowfeather threeawn); *Sorghastrum secundum* (lopsided Indiangrass); *Muhlenbergia capillaris* (hairawn muhly); *Rhynchospora floridensis* (Florida white-top sedge); *Tragia saxicola* (pineland noseburn); *Echites umbellata* (devil’s potato); *Croton linearis* (pineland croton); *Chamaesyce* spp. (sandmats); *Chamaecrista deeringiana* (partridge pea); *Zamia integrifolia* (coontie); and *Anemia adiantifolia* (maidenhair pineland fern) (FNAI 2010, p. 62). An open canopy and understory are required to allow sufficient sunlight to reach the herbaceous layer and permit growth and flowering of *B. mosieri* and *L. c.* var. *carteri*. Therefore, based on the information above, we identify vegetation composition and structure that allows for adequate sunlight, and space for individual growth and population expansion, to be a PBF for these plants.

#### Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

*Brickellia mosieri* —The reproductive biology and needs of *B. mosieri* have not been studied (Bradley and Gann 1999, p. 12), and our knowledge of the ecology of the species related to reproduction needs primarily consists of observed habitat requirements

and demographic trends. Field observations indicate that the species does not usually occur in great abundance; populations are typically sparse and contain a low density of plants, even in well-maintained pine rockland habitat (Bradley and Gann 1999, p. 12). Bradley (2013b, pers. comm.) estimated that, based on this observation, the minimum habitat patch size to support a sustaining population may be approximately 2 ha (5 ac), although no studies have been conducted to evaluate this estimate. Some occupied sites are less than 2 ha (5 ac) in size, but it is not known whether these populations are sustainable in the long term.

Reproduction is sexual (Bradley and Gann 1999, p. 12), but specific pollinators or dispersers are unknown. Flower morphology suggests the species may be pollinated by butterflies, bees, or both (Koptur 2013, pers. comm.). Wind is one likely dispersal vector (Gann 2013b, pers. comm.), as is seed dispersal by animals. Within pine rocklands, more than 50 species of butterflies have been observed that may act as pollinators for *Brickellia mosieri*. Similarly, a large variety of native and nonnative bee species are known to pollinate pine rockland plants, which may include *B. mosieri*. Declines in pollinator visitation may cause decreased seed set or fruit production, which could lead to lower seedling establishment and numbers of mature plants. The availability of pollinators of appropriate type and sufficient numbers is necessary for *B. mosieri* to reproduce and ensure sustainable populations. Because the specific type(s) and number of pollinators of *B. mosieri* are unknown, and may include non-generalist species closely tied to pine rockland habitats, preserving and restoring connectivity of pine rockland habitat fragments is essential to the long-term conservation of the species. Sufficient

connectivity of pine rockland habitat is also necessary to support establishment of new populations through seed dispersal, and to preserve and enhance genetic diversity.

Therefore, based on the information above, we identify habitat connectivity of sufficient size and suitability, or habitat that can be restored to these conditions that supports the species' growth, distribution, and population expansion, to be a PBF for *Brickellia mosieri*.

*Linum carteri* var. *carteri*—The reproductive needs of *L. c.* var. *carteri* are not well understood. Maschinski (2006, p. 83) reported that *L. c.* var. *carteri* has typical behavior for an early successional plant—plants grow to reproductive status quickly, and populations typically contain a higher density of plants. The minimum habitat patch size to support a sustaining population may be smaller than that needed for *Brickellia mosieri*, possibly as small as 0.4 ha (1 ac) (Bradley 2013b, pers. comm.), although no studies have been conducted to evaluate this estimate. Reproduction is believed to be sexual (Bradley and Gann 1999, p. 71), but specific pollinators are unknown. Flower morphology suggests this variety may also be pollinated by butterflies or bees, or both (Koptur 2013, pers. comm.). Alternatively, Mosquin and Hayley (1967, p. 1278) suggested *L. c.* var. *carteri* may be self-pollinated. Dispersal agents are unknown, but most likely include animal and human-related vectors in the existing landscape.

Therefore, given the uncertainty regarding specific pollinators and dispersal vectors, the importance of connectivity of pine rockland habitat discussed above for

*Brickellia mosieri* also applies to *Linum carteri* var. *carteri*. We identify habitat connectivity of sufficient size and suitability, or habitat that can be restored to these conditions to support the species' growth, distribution, and population expansion, to also be a PBF for *L. c.* var. *carteri*.

#### Habitats Protected from Disturbance or Representative of the Historical, Geographic, and Ecological Distributions of *Brickellia mosieri* and *Linum carteri* var. *carteri*

*Brickellia mosieri* and *Linum carteri* var. *carteri* continue to occur in habitats that are protected from incompatible human-generated disturbances and are only partially representative of the plants' historical, geographical, and ecological distributions because their ranges within these habitats has been reduced. These plants are still found in their representative plant communities of pine rocklands. Representative communities are located on Federal, State, local, and private lands that implement habitat management activities which benefit these plants.

*Disturbance Regime*—Pine rockland is dependent on some degree of disturbance, most importantly from natural or prescribed fires (Loope and Dunevitz 1981, p. 5; Snyder *et al.* 2005, p. 1; Bradley and Saha 2009, p. 4; Saha *et al.* 2011, pp. 169-184; FNAI 2010, p. 63). These fires are a vital component in maintaining native vegetation, such as *Brickellia mosieri* and *Linum carteri* var. *carteri*, which require high light conditions and exposed substrate. Without fire, succession from pine rockland to rockland hammock (an upland tropical hardwood forest occurring over limestone) is rapid, and understory

species such as *B. mosieri* and *L. c. var. carteri* are shaded out by dense canopy and deep leaf litter. In addition, displacement of native species by invasive, nonnative plants often occurs.

Hurricanes and other significant weather events also create openings in the pine rockland canopy (FNAI 2010, p. 63), although these types of disturbances are more sporadic in nature and may pose a threat to small, isolated populations such as those that remain of *Brickellia mosieri* and *Linum carteri* var. *carteri*. For *L. c. var. carteri*, mowing may also serve as another means of maintaining an open canopy where the plant occurs in firebreaks, rights-of-way, and cleared fields. However, in order to avoid potential negative impacts, the timing of mowing is critical and should be conducted after flowering has occurred (see *Demographics, Reproductive Biology and Population Genetics of L. c. var. carteri* in the proposed listing rule published October 3, 2013 (78 FR 61273)). Mechanical control of hardwoods may also help maintain an open canopy in pine rockland, but cannot entirely replace fire since it does not have the same benefits related to removal of leaf litter and nutrient cycling. Natural and prescribed fire remains the primary and ecologically preferred disturbance regime for pine rockland.

*Brickellia mosieri* tends to occur on exposed limestone with minimal organic litter and in areas with only minor amounts of substrate disturbance (Bradley and Gann 1999, p. 11). In contrast, *Linum carteri* var. *carteri* is currently associated with pine rocklands that have undergone some sort of substrate disturbance (*e.g.*, firebreaks, canal banks, edges of railway beds). All known occurrences over the last 15 years have been within

either scarified pine rockland, disturbed areas adjacent to or within pine rocklands, or completely disturbed areas having a limestone substrate (Bradley and Gann 1999, p. 71; Bradley 2013a, pers. comm.). Inadequate fire management, resulting in closed canopy conditions, may have excluded *L. c. var. carteri* (which responds positively to low competition and high light environments) from otherwise suitable pine rocklands habitat (Bradley and Gann 1999, p. 71). Alternatively, this variety may only proliferate on sites where exposed substrate occurs following disturbance; historically this may have occurred following hurricanes (e.g., under tip-up mounds of fallen trees), animal disturbance, or fire (Gann 2013a, pers. comm.). Whether current occurrences of *L. c. var. carteri* reflect a need for higher light conditions than *B. mosieri*, a requirement for disturbed substrate, or some combination of these, or other unidentified factors, is unknown, and microhabitat data for either plant are generally lacking. The best available scientific data suggest that both plants require a similar disturbance regime to maintain the open canopy and low litter conditions characteristics of pine rockland habitat, and thereby maintain persistent populations.

Therefore, based on the information above, we identify natural or prescribed fire, or other disturbance regimes that maintain the pine rockland habitat, to be a PBF for these plants.

#### *Primary Constituent Elements*

Under the Act and its implementing regulations, we are required to identify the



physical or biological features essential to the conservation of *Brickellia mosieri* and *Linum carteri* var. *carteri* in areas occupied at the time of listing, focusing on the features' primary constituent elements (PCEs). PCEs are those specific elements of the PBFs that provide for a species' life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the PBFs and habitat characteristics required to sustain the plants' life-history processes, we determine that the PCEs specific to *Brickellia mosieri* and *Linum carteri* var. *carteri* are:

(1) Areas of pine rockland habitat that contain:

(a) Open canopy, semi-open subcanopy, and understory;

(b) Substrate of oolitic limestone rock; and

(c) A plant community of predominately native vegetation that may include, but is not limited to:

(i) Canopy vegetation dominated by *Pinus elliottii* var. *densa* (South Florida slash pine);

(ii) Subcanopy vegetation that may include, but is not limited to, *Serenoa repens* (saw palmetto), *Sabal palmetto* (cabbage palm), *Coccothrinax argentata* (silver palm), *Myrica cerifera* (wax myrtle), *Myrsine floridana* (myrsine), *Metopium toxiferum* (poisonwood), *Byrsonima lucida* (locustberry), *Tetrazygia bicolor* (tetrazygia), *Guettarda scabra* (rough velvetseed), *Ardisia escallonioides* (marlberry), *Psidium longipes*

(mangroveberry), *Sideroxylon salicifolium* (willow bustic), and *Rhus copallinum* (winged sumac);

(iii) Short-statured shrubs that may include, but are not limited to, *Quercus pumila* (running oak), *Randia aculeata* (white indigoberry), *Crossopetalum ilicifolium* (Christmas berry), *Morinda royoc* (redgal), and *Chiococca alba* (snowberry); and

(iv) Understory vegetation that may include, but is not limited to: *Andropogon* spp.; *Schizachyrium gracile*, *S. rhizomatum*, and *S. sanguineum* (bluestems); *Aristida purpurascens* (arrowfeather threeawn); *Sorghastrum secundum* (lopsided Indiangrass); *Muhlenbergia capillaris* (hairawn muhly); *Rhynchospora floridensis* (Florida white-top sedge); *Tragia saxicola* (pineland noseburn); *Echites umbellata* (devil's potato); *Croton linearis* (pineland croton); *Chamaesyce* spp. (sandmats); *Chamaecrista deeringiana* (partridge pea); *Zamia integrifolia* (coontie); and *Anemia adiantifolia* (maidenhair pineland fern).

(2) A disturbance regime that naturally or artificially duplicates natural ecological processes (e.g., fire, hurricanes, or other weather events) and that maintains the pine rockland habitat as described in PCE (1).

(3) Habitats that are connected and of sufficient area to sustain viable populations of *Brickellia mosieri* and *Linum carteri* var. *carteri* in the pine rockland habitat as described in PCE (1).

### *Special Management Considerations or Protection*

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and which may require special management considerations or protection. The features essential to the conservation of *Brickellia mosieri* and *Linum carteri* var. *carteri* may require special management considerations or protection to reduce threats related to habitat loss, fragmentation, and modification primarily due to development; inadequate fire management; nonnative, invasive plants; and sea level rise. For an indepth discussion of threats, see **Summary of Factors Affecting the Species** in our proposed listing rule published in the **Federal Register** on October 3, 2013 (78 FR 61273), and as updated in our final listing rule published in the **Federal Register** on September 4, 2014 (79 FR 52567). For a discussion of the special management considerations or protection for the PBFs in this critical habitat designation, see the discussion in the proposed critical habitat rule published in the **Federal Register** on October 3, 2013 (78 FR 612793).

### *Criteria Used To Identify Critical Habitat*

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b) we review available information pertaining to the habitat requirements of the species and identify occupied areas at the time of listing that contain

the features essential to the conservation of the species. If, after identifying areas occupied by the species at the time of listing, we determine that those areas are inadequate to ensure conservation of the species, in accordance with the Act and our implementing regulations at 50 CFR 424.12(e) we then consider whether designating additional areas—outside those occupied at the time of listing—are essential for the conservation of the species.

In this rule, we are designating as critical habitat both within the geographical area occupied by these plants at the time of listing, and outside the geographical area occupied by these plants at the time of listing but within their historical range, because such areas are essential for the conservation of these plants. We used habitat and historical occurrence data, and applied general conservation design principles, to identify unoccupied habitat essential for the conservation of these plants.

To determine the general extent, location, and boundaries of critical habitat, the Service used the following sources of information:

(1) Historical and current records of *Brickellia mosieri* and *Linum carteri* var. *carteri* occurrences and distributions found in publications, reports, personal communications, and associated voucher specimens housed at museums and private collections;

(2) FNAI, IRC, and FTBG GIS data showing the location and extent of documented occurrences of *Brickellia mosieri* and *Linum carteri* var. *carteri*, as well as occurrence data for other imperiled pine rockland species;

(3) Reports and databases prepared by botanists with IRC and FTBG. Some of these were funded by the Service, while others were requested or volunteered by biologists with IRC or FTBG;

(4) ESRI ArcGIS online basemap aerial imagery (collected December 2010) and Digital Orthophoto Quarter Quadrangles (DOQQs; 1-m true color; collected 2004) of Miami-Dade County. Because pine rockland habitat has a recognizable signature in these aerial photographs, the presence of PCEs was partially determined through evaluation of this imagery; and

(5) GIS data depicting soils (Soil Service Geographic (SSURGO) dataset), land cover (South Florida Water Management District Land Use and Cover 2008-2009), and elevation (Dade County LiDAR 88 - 2003) within Miami-Dade County; these data were also used to determine the presence of PCEs.

Due to the lack of existing taxa-specific data or recommendations related to conservation design (e.g., minimum area or number of populations needed for recovery), we used general conservation design principles in conjunction with the best available data for *Brickellia mosieri* and *Linum carteri* var. *carteri* to identify those unoccupied pine rocklands with the highest conservation quality—that is, those areas that currently provide the best quality habitat and are likely to continue to do so in the future, or areas that have the highest restoration potential. Guidelines for conservation design, which have been developed using island biogeography models, are highly relevant to areas such as the fragmented pine rocklands of the Miami Rock Ridge (i.e., pine rockland islands in a sea of urban and agriculture development). Due to the degree of habitat loss that has

already occurred, application of all such guidelines are somewhat limited by the nature of the remaining habitat (e.g., sizes, shapes, and locations of individual habitat patches). As such, we evaluated conservation quality of unoccupied pine rockland habitat using the following three major principles:

(1) Geographic spread—Species that are well distributed across their native ranges are less susceptible to extinction than are species confined to small portions of their ranges.

(2) Size—Large habitat patches are superior to small habitat patches, in that larger areas will support larger populations and will be less negatively impacted by edge effects. All else being equal, conservation design options that include greater areal extent are superior. When comparative circumstances are not otherwise equal, factors such as habitat quality, the presence of specific landscape features, and the spatial arrangement of habitat may offset a solely area-driven selection process.

(3) Connectivity—Habitat that occurs in less fragmented, contiguous patches is preferable to habitat that is fragmented or isolated by urban lands. Habitat patches close to one another serve species of concern better than patches situated far apart.

Interconnected patches are better than isolated patches. Conservation design alternatives should seek, in order of priority:

- (a) Continuity within habitat (minimize additional fragmentation);
- (b) Connectedness (increase existing habitat patches); and
- (c) Proximity (minimize distance between habitat patches).

Using these guiding principles, we evaluated the remaining unoccupied pine

rockland habitat on the Miami Rock Ridge outside of ENP with the intent of identifying the largest patches and highest quality habitat available (patches of sufficient size and quality to support populations), in sufficient amount (i.e., sufficient numbers of populations) and spatial arrangement (to provide opportunities for future migration and colonization) to provide for the conservation of *Brickellia mosieri* and *Linum carteri* var. *carteri*. Our evaluation consisted of the following steps:

(1) Using primarily aerial imagery and GIS-based vegetation and soils data, we delineated pine rockland habitat in Miami Dade County outside of ENP. Pine rocklands were identified based on the presence of specific soil types (see “Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements,” above), and presence of pine rockland vegetation. Fire-suppressed areas and areas where intergrading with rockland hammock occurs were also evaluated. Some former pine rockland habitat was considered too severely fire suppressed (i.e., having extremely dense canopy cover) such that it is now unsuitable habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri*, and unlikely to be able to be restored; these areas were not delineated as pine rocklands in our critical habitat analysis. Some cleared areas occurring over pine rockland soils were delineated, with the intent that such areas provide opportunities for restoration. The resulting habitat layer consisted of 245 habitat patches.

(2) To maximize geographic spread within the plants’ historical ranges, we divided the extent of delineated habitat into five geographic areas (northeast to southwest).

(3) For each plant, we included occupied patches in final critical habitat (25 habitat patches for *Brickellia mosieri* , and 6 patches for *Linum carteri* var. *carteri*). One

occurrence of *L. c. var. carteri* (a single plant found on a canal bank) is not included in final critical habitat due to the anomalous nature of the occurrence, and because we were not able to define patch boundaries based on any of the criteria described in (1), above. In addition, a new occurrence of *L. c. var. carteri* (11 plants in a firebreak) was discovered on October 17, 2014 on the Deering Estate, but outside the proposed critical habitat subunit. Because we believe that the proposed critical habitat designation contains sufficient habitat for the conservation of this plant, subunit boundaries were not revised and this occurrence is not included in the final critical habitat designation.

(4) For each plant, for the remaining (unoccupied) habitat, we excluded patches below the estimated minimum size for each plant based on expert opinion—2 ha (5 ac) for *Brickellia mosieri*, and 0.4 ha (1 ac) for *Linum carteri* var. *carteri* (see “Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring,” above). The resulting layers consisted of 106 habitat patches for *B. mosieri*, and 218 patches for *L. c. var. carteri*.

(5) For each plant, for the remaining habitat (unoccupied; 2 ha (5 ac) or greater than or equal to 0.4 ha (1 ac), *Brickellia mosieri* or *Linum carteri* var. *carteri*, respectively), we assigned a score for eight evaluation criteria designed to assess overall conservation quality of the patch, using the following five major objectives (discussed more indepth below and at <http://www.regulations.gov>):

(a) Onsite habitat quality (intact, open pine rocklands scored higher than cleared patches or patches having a closed canopy);

(b) Patch size (larger patches scored higher);



(c) Surrounding landscape composition (pine rocklands surrounded by less development scored higher);

(d) Connectivity (within each geographic area, pine rockland patches in closer proximity to each other and with greater numbers of neighbors scored higher); and

(e) Vulnerability to sea level rise (pine rockland patches located at higher elevations scored higher).

(6) For each plant, within each geographic area, we used a consequence matrix to evaluate the performance of each unoccupied pine rockland patch across the objectives described above in (5). The resulting total score of each patch was a 0.0–1.0 value, summed across all criteria, where a score of 1.0 indicates the patch in each geographic area that has the highest conservation quality, based on the defined objectives.

Using the results of the consequence matrix for each plant, we evaluated potential “cut-off” values for patch total score by visually assessing and comparing habitat amounts and spatial arrangements between various cut-off values in order to identify the best conservation arrangement. Because taxa-specific data and recommendations were not available regarding how much area is needed for the conservation and recovery of *Brickellia mosieri* and *Linum carteri* var. *carteri*, we applied the general conservation design principles related to connectivity, above, and principles of population viability and metapopulation theory. Small populations and plant species with limited distributions, like those of *B. mosieri* and *L. c.* var. *carteri*, are vulnerable to relatively minor environmental disturbances (Frankham 2005, pp. 135–136), and are subject to the loss of genetic diversity from genetic drift, the random loss of genes, and inbreeding (Ellstrand

and Elam 1993, pp. 217–237; Leimu *et al.* 2006, pp. 942–952). These factors increase the probability of both local extinctions and population extinction (Barrett and Kohn 1991, pp. 4, 28; Newman and Pilson 1997, p. 360; Palstra and Ruzzante 2008, pp. 3428–3447). To ameliorate these effects, the recovery of many rare plant species includes the creation of new sites or reintroductions to increase population size (each occurrence, and overall) and support genetic diversity. Sufficient area is also required to allow *B. mosieri* and *L. c. var. carteri* to expand their current distributions (curtailed compared to historical ranges), use habitat depending on the availability of suitable conditions (dynamic, related to time since disturbance within each patch), and maintain their ability to withstand local- or unit-level environmental fluctuations or catastrophes.

Based on our assessment, as described above, we determined that unoccupied pine rockland patches with a total score for conservation quality greater than 0.50 should be proposed for critical habitat designation. In addition, in the proposed critical habitat rule published in the **Federal Register** on October 3, 2013 (78 FR 61293), we proposed 15 supplemental pine rockland patches for critical habitat designation for one or more of the following reasons: (1) A population of *Brickellia mosieri* was previously observed in the patch (although not recently enough to consider the population extant at this time); (2) addition of the patch increases conservation quality of adjacent critical habitat; (3) addition of the patch increases connectivity of pine rockland habitat across the landscape; and (4) the patch is located at the northernmost end of these plants' historical ranges (an area not captured using the consequence matrix approach). The last category consists of four patches with conservation quality less than or equal to 0.50, due to some

combination of lower onsite habitat quality, smaller size, and more development in the surrounding landscape, all of which are related to their position closer to Miami. While these patches may not represent the best habitat currently available, they do provide needed opportunities to increase these plants' geographic spread and restore the plants to the northernmost intact habitat within their historical ranges, which is more heavily impacted, and are essential to the conservation of these plants, as discussed above.

Revisions to the resulting set of habitat patches were proposed in the revised proposed rule and availability of the draft economic analysis published in the **Federal Register** on July 15, 2014 (79 FR 41211), based on new information concerning the current habitat condition of proposed areas as well as information regarding additional areas of suitable habitat that were not included in the proposed designation but that meet the definition of critical habitat. The proposed changes consisted of the removal of two unoccupied patches from the proposed designation, the revision of patch boundaries for three unoccupied areas, and the proposed designation of six new unoccupied pine rockland patches (multiple patches may make up a single subunit). For more information regarding these proposed changes, refer to that notice. We have since determined that three of the six new proposed patches (i.e., three unoccupied areas on Department of Defense lands) meet the criteria for exemption from critical habitat designation under section 4(a)(3) of the Act (discussed under the **Exemptions** section, below), and we have removed these from the designation of critical habitat in this final rule.

Habitat Within the Geographic Range at the Time of Listing

We are designating seven critical habitat units for each plant. Five of the seven units were occupied by *Brickellia mosieri* at the time of listing; the remaining two units are within the plant's historical range, but were unoccupied at the time of listing. Three of the seven units were occupied by *Linum carteri* var. *carteri* at the time of listing; the remaining four units are within the plant's historical range, but were unoccupied at the time of listing. The occupied units include the mapped extent of each plant's population and contain the PCEs.

Within each of these occupied units is also unoccupied habitat, which is included based on our determination that such areas are essential to the conservation of these plants, as discussed above. In addition to providing sufficient habitat (area, number of patches, connectivity), this unoccupied habitat allows for the dynamic nature of pine rockland habitat. Conditions within pine rockland patches, such as the openness of the canopy and understory and the accumulation of leaf litter over the limestone substrate, vary greatly across the landscape and across time. Only a portion of the delineated habitat is suitable for *Brickellia mosieri* or *Linum carteri* var. *carteri*, or both plants, at any given time, and the size and location of suitable areas within the population is dynamic over time, being largely driven by the frequency and scale of natural or prescribed fires and other types of disturbance (e.g., for *L. c.* var. *carteri*, mowing or other events that disturb the limestone substrate). Although prescribed burns are administered on conservation lands that retain *B. mosieri* or *L. c.* var. *carteri*, or both, populations, fire return intervals and scope are inconsistent. Thus, areas of pine rockland

habitat that now support one or both of these plants may not support the plants in the future, as inadequate fire management removes or fragments suitable habitat.

Conversely, suitable habitat conditions may return or increase in areas following natural or prescribed fires, allowing opportunities for the plants to expand or colonize these areas in the future.

The delineation of units (occupied plus unoccupied patches) also includes space to plan for the persistence of *Brickellia mosieri* and *Linum carteri* var. *carteri* populations in the face of imminent effects on habitats as a result of sea level rise. Although occupied habitat within each unit contains the PCEs, some of these areas may be altered, as a result of vegetation shifts or salt water intrusion, to an extent which cannot be predicted at this time.

In identifying unoccupied patches with these units, we considered the following additional criteria, which we incorporated into the consequence matrix described above:

(1) *Objective 1 (onsite habitat quality)*: Pine rockland areas of sufficient habitat quality to support the growth and reproduction of *Brickellia mosieri* and *Linum carteri* var. *carteri*. In general, areas of intact pine rockland having an open canopy and understory are more likely to support populations of these plants over the long term. In some cases, disturbed or cleared pine rockland areas have also been included in the designation; these areas possess other desirable characteristics (e.g., size, connectivity) and could allow *B. mosieri* or *L. c.* var. *carteri* to expand from areas already occupied by

these plants. These areas are typically habitats within or adjacent to pine rocklands that have been affected by natural or anthropogenic impacts, but that retain areas that are still suitable for the plants. These areas would help to off-set the anticipated loss and degradation of habitat occurring or expected from the effects of climate change (such as sea level rise) or due to development.

(2) *Objective 2 (patch size)*: Pine rockland areas of sufficient size to support ecosystem processes for populations of *Brickellia mosieri* or *Linum carteri* var. *carteri*. Given areas of equal habitat quality, larger areas would be ranked higher in our evaluation.

(3) *Objective 3 (surrounding landscape composition)*: Pine rockland areas within a suitable landscape to allow for natural disturbance regimes—specifically, prescribed fire—and to minimize negative impacts related to changes in hydrology or nutrient/pollution inputs from the surrounding area. Pine rocklands surrounded by other natural communities will likely provide higher quality habitat in the long term than pine rocklands that are imbedded in a highly urbanized or agricultural matrix. Given areas of equal habitat quality and size, areas with more natural communities and less urban development in the surrounding area would be ranked higher in our evaluation.

(4) *Objective 4 (connectivity)*: Pine rockland areas of sufficient amount and arrangement to maintain connectivity of habitat to allow for population sustainability and expansion. Sufficient connectivity of pine rockland habitat will contribute to the

availability of pollinators of appropriate type and sufficient numbers to allow *Brickellia mosieri* and *Linum carteri* var. *carteri* to reproduce and ensure sustainable populations, and to allow for population expansion through seed dispersal. Given areas of equal habitat quality, size, and surrounding landscape composition, those patches having more and closer neighbors (i.e., other pine rockland patches) would be ranked higher in our evaluation.

(5) *Objective 5 (vulnerability to sea level rise)*: Pine rockland areas of suitable elevation to reduce vulnerability to sea level rise. Those pine rocklands situated at higher elevations are less likely to be negatively affected by either inundation or vegetation shifts caused by changes in the salinity of the water table and soils associated with sea level rise. Given areas of equal conservation quality, as described above, those patches having a higher average elevation would be ranked higher in our evaluation.

A complete description regarding how these objectives were weighted and evaluated in our consequence matrix can be found in the supplemental materials provided with the proposed rule at <http://www.regulations.gov>.

#### Habitat Outside of the Geographic Range at the Time of Listing

We are designating two critical habitat units that were unoccupied by *Brickellia mosieri* at the time of listing, and four critical habitat units that were unoccupied by *Linum carteri* var. *carteri* at the time of listing, which have been determined to be

essential to the conservation of these plants. These units represent portions of these plants' historical ranges in which the plants have been extirpated (see *Current Range, Population Estimates, and Status* for both plants in our proposed listing rule published in the **Federal Register** on October 3, 2013 (78 FR 61273)). In one unit, located in the northern portion of these plants' historical ranges but unoccupied by either *B. mosieri* or *L. c. var. carteri*, the unoccupied critical habitat patches are the only pine rockland habitat that remains in this area. While the full extent of *B. mosieri*'s historical range is unknown, due to limited data, comparing its current distribution to historical observations suggests that its range has contracted at least 30 percent (based on our revised estimate of the species' historical range as described in the final listing rule published in the **Federal Register** on September 4, 2014 (79 FR 52567)). Likewise, the historical range of *L. c. var. carteri* has been reduced approximately 30 percent. The reductions in the historical ranges of these plants have occurred almost entirely in their northern portions, between Pinecrest and South Miami/Coconut Grove. As noted earlier, little pine rockland habitat has escaped urban development in this area, and those patches that remain are of lesser conservation quality due to lower onsite habitat quality, smaller patch sizes, and higher amounts of development in the surrounding landscape. While these patches may not represent the best pine rockland habitat currently available, they provide needed habitat to increase these plants' geographic spread to currently unoccupied portions of their historical ranges, and are essential for the conservation of the two plants.

In summary, for occupied habitat within the geographic area occupied by *Brickellia mosieri* or *Linum carteri* var. *carteri* at the time of listing, we delineated



critical habitat unit boundaries by evaluating habitat suitability of pine rockland habitat within this geographic area, and retained those areas that contain some or all of the PCEs to support life-history functions essential for conservation of these plants.

For unoccupied habitat within the geographic area occupied by *Brickellia mosieri* or *Linum carteri* var. *carteri* at the time of listing, we delineated critical habitat unit boundaries by evaluating the five objectives incorporated into the consequence matrix (see discussion above).

For habitat outside the geographic area occupied by the species at the time of listing, we delineated critical habitat unit boundaries based on the availability of remaining pine rockland habitat in the unit. All four available patches were included in the delineation in order to provide sufficient area for *Brickellia mosieri* and *Linum carteri* var. *carteri* to expand their current restricted ranges.

When determining critical habitat boundaries within this final rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features for *Brickellia mosieri* and *Linum carteri* var. *carteri*. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action

involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

The critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document in the **Regulation Promulgation** section. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on <http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0108, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT**, above).

Units and subunits are designated based on sufficient elements of physical or biological features being present to support the life processes of *Brickellia mosieri* and *Linum carteri* var. *carteri*. Some subunits contain all of the identified elements of physical or biological features and support multiple life processes. Some subunits contain only some elements of the physical or biological features necessary to support particular use of that habitat by *B. mosieri* or *L. c.* var. *carteri*.

### **Final Critical Habitat Designation**

We are designating seven units, each, as critical habitat for *Brikellia mosieri* and

*Linum carteri*. var. *carteri*. The critical habitat areas described below constitute our best assessment at this time of areas that meet the definition of critical habitat.

*Brickellia mosieri*

The seven units (all located in Miami-Dade County, Florida) we are designating as critical habitat for *Brickellia mosieri* are: (1) Unit BM1: Trinity Pineland and surrounding areas; (2) Unit BM2: Nixon Smiley Pineland Preserve and surrounding areas; (3) Unit BM3: U.S. Department of Agriculture (USDA) Subtropical Horticultural Research Station and surrounding areas; (4) Unit BM4: Richmond Pinelands and surrounding areas; (5) Unit BM5: Quail Roost Pineland and surrounding areas; (6) Unit BM6: Camp Owaissa Bauer and surrounding areas; and (7) Unit BM7: Navy Wells Pineland Preserve and surrounding areas. Because of the highly fragmented nature of the remaining pine rockland habitat, these large overall unit boundaries encompass multiple, smaller designations (i.e., subunits) within each unit; only these subunits within the unit boundaries meet the definition of critical habitat. Subunit designations identify individual habitat patches, or multiple habitat patches having the same occupancy status that are only separated by a road. Table 1 shows occupancy, area, and land ownership for each subunit within the critical habitat designation for *B. mosieri*.

*Table 1.* Occupancy (O = occupied, U = unoccupied), area, and land ownership of designated critical habitat subunits for *Brickellia mosieri*. Area estimates reflect all land within critical habitat unit/subunit boundaries. Substantial overlap exists with areas being

designated for *Linum carteri*. var. *carteri*.

Unit	Subunit	Occupancy	Hectares	Acres	Land Ownership by Type <sup>1</sup>
<b>BM1</b>	BM1A	U	5	13	County/Local
	BM1B	U	12	30	State, County/Local, Private/Other
	<i>Unit Total</i>		<i>18</i>	<i>43</i>	
<b>BM2</b>	BM2A	U	32	78	State, County/Local, Private/Other
	BM2B	U	47	115	County/Local
	BM2C	U	8	19	State
	BM2D	O	3	8	County/Local
	BM2E	O	2	5	County/Local
	BM2F	U	1	2	County/Local
	BM2G	O	16	39	State, County/Local
	<i>Unit Total</i>		<i>108</i>	<i>267</i>	
<b>BM3</b>	BM3A	U	2	6	State
	BM3B	U	59	146	Federal, County/Local, Private/Other
	BM3C	U	11	28	State, County/Local, Private/Other
	BM3D	U	3	6	County/Local
	BM3E	U	34	84	State, County/Local
	BM3F	U	6	15	State, County/Local
	BM3G	U	5	11	County/Local
	BM3H	U	8	19	County/Local, Private/Other
	<i>Unit Total</i>		<i>127</i>	<i>315</i>	
<b>BM4</b>	BM4A	U	89	219	Federal, County/Local, Private/Other
	BM4B	O	137	339	Federal, County/Local, Private/Other
	BM4C	U	10	24	Federal, County/Local
	BM4D	U	17	42	County/Local
	BM4E	O	124	306	Federal, County/Local
	BM4F	U	5	13	County/Local, Private/Other
	BM4G	O	6	15	Private/Other
	BM4H	U	7	17	County/Local
	<i>Unit Total</i>		<i>395</i>	<i>975</i>	
<b>BM5</b>	BM5A	O	25	62	State, County/Local, Private/Other
	BM5B	U	6	14	County/Local, Private/Other
	BM5C	U	4	10	County/Local
	BM5D	O	3	8	County/Local, Private/Other

Unit	Subunit	Occupancy	Hectares	Acres	Land Ownership by Type <sup>1</sup>
	BM5E	U	22	53	State, County/Local, Private/Other
	BM5F	U	3	7	County/Local
	BM5G	U	4	10	County/Local, Private/Other
	BM5H	U	9	22	State, County/Local
	BM5I	U	6	14	County/Local, Private/Other
	BM5J	U	13	31	County/Local, Private/Other
	BM5K	U	3	6	Private/Other
	Unit Total		96	238	
BM6	BM6A	U	38	93	State, County/Local, Private/Other
	BM6B	U	14	35	County/Local, Private/Other
	BM6C	U	5	12	County/Local, Private/Other
	BM6D	U	4	10	State, County/Local, Private/Other
	BM6E	O	13	32	County/Local, Private/Other
	BM6F	O	7	17	State, County/Local, Private/Other
	BM6G	O	1	3	County/Local, Private/Other
	BM6H	O	1	4	County/Local, Private/Other
	BM6I	U	6	15	State, County/Local, Private/Other
	BM6J	U	11	28	County/Local, Private/Other
	BM6K	U	7	16	County/Local, Private/Other
	BM6L	O	5	12	County/Local, Private/Other
	Unit Total		112	276	
BM7	BM7A	U	11	27	County/Local, Private/Other
	BM7B	U	10	24	County/Local, Private/Other
	BM7C	U	8	20	State, County/Local
	BM7D	U	7	18	State, County/Local, Private/Other
	BM7E	U	16	39	County/Local, Private/Other
	BM7F	O	133	330	State, County/Local, Private/Other
	BM7G	U	11	27	County/Local, Private/Other
	BM7H	U	11	26	State, County/Local, Private/Other
	Unit Total		206	510	
CH Total			1,062	2,624	

Note: Area sizes may not sum due to rounding.

<sup>1</sup> Ownership information is based on Miami-Dade County parcel data (July 2013) and FNAI's Florida Managed Lands data (March 2014)

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for *Brickellia mosieri*, below.

*Unit BM1: Trinity Pineland and surrounding areas, Miami-Dade County, Florida*

Unit BM1 consists of 18 ha (43 ac) in Miami-Dade County. Within Unit BM1, there are two subunits – BM1A (County-owned) and BM1B (combination of State, County, and privately owned lands). The unit is comprised of State lands within Trinity Pineland County Park (4 ha (10 ac)); County lands primarily within A. D. “Doug” Barnes Park (6 ha (14 ac)); and parcels in private ownership (8 ha (19 ac)). This unit is bordered on the north by SW 24 Street, on the south by the Snapper Creek Expressway (State Road (SR) 878), on the east by SW 67 Avenue, and on the west by SW 87 Avenue. The unit is within the historical range of *Brickellia mosieri*, although data are lacking regarding historical occupancy of the specific critical habitat patches in the unit. This unit includes the only remaining pine rockland habitat in this northern portion of the Miami Rock Ridge.

This unit was not occupied by *Brickellia mosieri* at the time of listing but is essential to the conservation of the species because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic

events, should *B. mosieri* be extirpated from one of its current locations.

*Unit BM2: Nixon Smiley Pineland Preserve and surrounding areas, Miami-Dade County, Florida*

Unit BM2 consists of approximately 108 ha (267 ac) of habitat in Miami-Dade County. Within Unit BM2, there are seven subunits (BM2A–BM2G) comprising primarily conservation lands and including four larger areas plus three smaller areas. The unit is comprised of State lands within Camp Matecumbe, Tamiami Pineland Complex Addition, and Rockdale Pineland (49 ha (121 ac)); County/local lands primarily within Nixon Smiley Pineland Preserve, Tamiami #8 (Nixon Smiley Addition) Pineland, Pine Shore Pineland Preserve, Ron Ehman Park, and Rockdale Pineland Addition (59 ha (146 ac)); and small portions of parcels in private or other ownership (less than 1 ha (less than 1 ac)). This unit is bordered on the north by SW 104 Street, on the south by SW 152 Street (Coral Reef Drive), on the east by U.S. 1 (South Dixie Highway), and on the west by SW 177 Avenue (Krome Avenue).

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Brickellia mosieri* (three occurrences; approximately 21 ha (52 ac)) at the time of listing. This occupied habitat contains some or all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special

management considerations or protection to address threats of habitat fragmentation; inadequate fire management; competition with nonnative, invasive plants; and sea level rise. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Some of the unoccupied habitat within this unit was historically occupied by *Brickellia mosieri*, although it was not occupied by the species at the time of listing. This unoccupied habitat is essential to the conservation of *B. mosieri* because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *B. mosieri* be extirpated from one of its current locations.

*Unit BM3: USDA Subtropical Horticultural Research Station and surrounding areas, Miami-Dade County, Florida*

Unit BM3 consists of approximately 127 ha (315 ac) of habitat in Miami-Dade County. Within Unit BM3, there are eight subunits (BM3A–BM3H), including two larger areas (U.S. Department of Agriculture (USDA) Subtropical Horticultural Research Station, and Deering Estate at Cutler) plus six smaller areas surrounding these. The unit is comprised of Federal lands within the USDA Subtropical Horticultural Research Station (59 ha (145 ac)); State lands within the R. Hardy Matheson Preserve, Ludlam



Pineland, Deering Estate at Cutler, and Deering Estate South Addition (45 ha (112 ac)); County/local lands within Coral Reef Park, Ned Glenn Nature Preserve, and Bill Sadowski Park (15 ha (38 ac)); and parcels in private ownership (8 ha (19 ac)). This unit is bordered on the north by SW 112 Street, on the south by the intersection of Old Cutler Road and Franjo Road (County Road (CR) 977), on the east by the Atlantic Ocean, and on the west by U.S. 1 (South Dixie Highway). The unit is within the historical range of *Brickellia mosieri*, although data are lacking regarding historical occupancy of the specific critical habitat patches in the unit.

This unit was unoccupied by *Brickellia mosieri* at the time of listing but is essential to the conservation of the species because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *B. mosieri* be extirpated from one of its current locations.

*Unit BM4: Richmond Pinelands and surrounding areas, Miami-Dade County, Florida*

Unit BM4 consists of approximately 395 ha (975 ac) in Miami-Dade County. Within Unit BM4, there are eight subunits (BM4A–BM4H), most within the Richmond Pinelands complex (made up of Federal and County-owned lands, as well as land owned by the University of Miami). The unit is comprised of Federal lands owned by the USCG (Homeland Security), U.S. Army Corps of Engineers (ACOE; Department of Defense),

U.S. Prison Bureau (Department of Justice), and the U.S. Department of Commerce/National Oceanic and Atmospheric Administration (NOAA) (75 ha (185 ac)); County/local lands within and adjacent to Larry and Penny Thompson Park, Martinez Pineland, Zoo Miami, and Eachus Pineland (239 ha (590 ac)); and parcels in private or other ownership (81 ha (200 ac)). This unit is bordered on the north by SW 152 Street (Coral Reef Drive), on the south by SW 200 St (Quail Drive/SR 994), on the east by U.S. 1 (South Dixie Highway), and on the west by SW 177 Avenue (Krome Avenue).

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Brickellia mosieri* (approximately 267 ha (660 ac)) at the time of listing. All occupied habitat occurs within the Richmond Pinelands, which together compose the largest remaining group of contiguous fragments of pine rockland habitat outside of ENP. This occupied habitat contains all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat loss and fragmentation; inadequate fire management; competition with nonnative, invasive plants; and sea level rise. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Some of the unoccupied habitat within this unit was historically occupied by *Brickellia mosieri*, although it was not occupied by the species at the time of listing. This

unoccupied habitat is essential to the conservation of *B. mosieri* because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *B. mosieri* be extirpated from one of its current locations.

*Unit BM5: Quail Roost Pineland and surrounding areas, Miami-Dade County, Florida*

Unit BM5 consists of approximately 96 ha (238 ac) in Miami-Dade County. Within Unit BM5, there are 11 subunits (BM5A–BM5K), including 4 larger areas plus 7 smaller areas surrounding these. The unit is comprised of State lands within Quail Roost Pineland, Goulds Pineland and Addition, and Silver Palm Groves Pineland (39 ha (97 ac)); County/local lands including Black Creek Forest, Rock Pit #46, and lands owned by the School Board of Miami-Dade County (15 ha (37 ac)); and parcels in private ownership (42 ha (104 ac)), including Porter-Russell Pineland owned by the Tropical Audubon Society. This unit is bordered on the north by SW 200 St (Quail Drive/SR 994), on the south by SW 248 Street, on the east by the Florida Turnpike, and on the west by SW 194 Avenue.

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Brickellia mosieri* (two occurrences; approximately 28 ha (70 ac)) at the time of listing. This occupied habitat contains some or all of the PCEs,

including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat fragmentation; inadequate fire management; competition with nonnative, invasive plants; and sea level rise. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Unoccupied habitat in the unit is essential to the conservation of *Brickellia mosieri* because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *B. mosieri* be extirpated from one of its current locations.

*Unit BM6: Camp Owaissa Bauer and surrounding areas, Miami-Dade County, Florida*

Unit BM6 consists of approximately 112 ha (276 ac) of habitat in Miami-Dade County. Within Unit BM6, there are 12 subunits (BM6A–BM6L), composed of 1 larger area (Camp Owaissa Bauer and its addition) and 11 smaller areas to the south. The unit is comprised of State lands within Owaissa Bauer Pineland Addition, Ingram Pineland, West Biscayne Pineland, and Fuchs Hammock Addition (20 ha (50 ac)); County/local lands including Camp Owaissa Bauer, Pine Island Lake Park, Seminole Wayside Park,

and Northrop Pineland (63 ha (156 ac)); and parcels in private ownership (28 ha (70 ac)), including the private conservation area, Pine Ridge Sanctuary. This unit is bordered on the north by SW 248 Street, on the south by SW 312 Street, on the east by SW 112 Avenue, and on the west by SW 217 Avenue.

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Brickellia mosieri* (five occurrences; approximately 27 ha (67 ac)) at the time of listing. This occupied habitat contains some or all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat loss and fragmentation; inadequate fire management; competition with nonnative, invasive plants; and sea level rise. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Some of the unoccupied habitat within this unit was historically occupied by *Brickellia mosieri*. Although it was unoccupied by the species at the time of listing, this habitat is essential to the conservation of *B. mosieri* because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *B. mosieri* be extirpated from one of its current locations.

*Unit BM7: Navy Wells Pineland Preserve and surrounding areas, Miami-Dade County, Florida*

Unit BM7 consists of approximately 206 ha (510 ac) of habitat in Miami-Dade County. Within Unit BM7, there are eight subunits (BM7A–BM7H), including one larger area (Navy Wells Pineland Preserve) and seven smaller outlying areas. The unit is comprised of State lands within Palm Drive Pineland, Navy Wells Pineland #39, Navy Wells Pineland Preserve (portion), and Florida City Pineland (53 ha (132 ac)); County/local lands including primarily Sunny Palms Pineland and Navy Wells Pineland Preserve (portion) (125 ha (309 ac)); and parcels in private ownership (28 ha (68 ac)). This unit is bordered on the north by SW 320 Street, on the south by SW 368 Street, on the east by U.S. 1 (South Dixie Highway), and on the west by SW 217 Avenue.

This unit is composed of both occupied and unoccupied habitat. Some habitat in the unit was occupied by *Brickellia mosieri* (one occurrence; approximately 134 ha (330 ac)) at the time of listing. This occurrence is on Navy Wells Pineland Preserve, which is one of the largest remaining areas of pine rockland habitats outside of ENP. This occupied habitat contains all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat fragmentation; inadequate fire management; competition with

nonnative, invasive plants; and sea level rise. However, in Navy Wells, most of these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Some of the unoccupied habitat within this unit was historically occupied by *Brickellia mosieri*. Although it was unoccupied by the species at the time of listing, this habitat is essential to the conservation of *B. mosieri* because it serves to protect habitat needed to recover the species, reestablish wild populations within the historical ranges of the species, and maintain populations throughout the historical distribution of the species in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *B. mosieri* be extirpated from one of its current locations.

#### *Linum carteri* var. *carteri*

The seven units (all located in Miami-Dade County, Florida) we are designating as critical habitat for *Linum carteri* var. *carteri* are: (1) Unit LCC1: Trinity Pineland and surrounding areas; (2) Unit LCC2: Nixon Smiley Pineland Preserve and surrounding areas; (3) Unit LCC3: USDA Subtropical Horticultural Research Station and surrounding areas; (4) Unit LCC4: Richmond Pinelands and surrounding areas; (5) Unit LCC5: Quail Roost Pineland and surrounding areas; (6) Unit LCC6: Camp Owaissa Bauer and surrounding areas; and (7) Unit LCC7: Navy Wells Pineland Preserve and surrounding areas. Because of the highly fragmented nature of the remaining pine rockland habitat, these large overall unit boundaries encompass multiple, small designations (i.e., subunits)

within each unit; only these subunits within the unit boundaries are designated as critical habitat. Subunit designations identify individual habitat patches, or multiple habitat patches having the same occupancy status that are only separated by a road. Table 2 shows occupancy, area, and land ownership for each subunit within the critical habitat designation for *L. c. var. carteri*.

*Table 2.* Occupancy (O = occupied, U = unoccupied), area, and land ownership of designated critical habitat subunits for *Linum carteri* var. *carteri*. Area estimates reflect all land within critical habitat unit/subunit boundaries. Substantial overlap exists with areas being designated for *Brickellia mosieri*.

Unit	Subunit	Occupancy	Hectares	Acres	Land Ownership by Type <sup>1</sup>
LCC1	LCC1A	U	5	13	County/Local
	LCC1B	U	2	4	County/Local
	LCC1C	U	12	30	State, County/Local, Private/Other
	<i>Unit Total</i>		<i>19</i>	<i>48</i>	
LCC2	LCC2A	U	32	78	State, County/Local, Private/Other
	LCC2B	U	47	115	County/Local
	LCC2C	U	12	30	State, County/Local
	LCC2D	U	3	8	County/Local
	LCC2E	U	3	7	County/Local
	LCC2F	O	16	39	State, County/Local
	<i>Unit Total</i>		<i>113</i>	<i>278</i>	
LCC3	LCC3A	O	2	6	State
	LCC3B	O	1	2	County/Local, Private/Other
	LCC3C	O	59	146	Federal, County/Local, Private/Other
	LCC3D	U	11	28	State, County/Local, Private/Other
	LCC3E	U	3	6	County/Local
	LCC3F	U	34	84	State, County/Local
	LCC3G	U	6	15	State, County/Local
	LCC3H	U	5	11	County/Local
	LCC3I	U	8	19	County/Local, Private/Other



Unit	Subunit	Occupancy	Hectares	Acres	Land Ownership by Type <sup>1</sup>
	<i>Unit Total</i>		128	316	
LCC4	LCC4A	U	236	582	Federal, County/Local, Private/Other
	LCC4B	U	142	350	Federal, County/Local
	LCC4C	U	1	3	Private/Other
	LCC4D	U	7	17	County/Local
	<i>Unit Total</i>		386	952	
LCC5	LCC5A	U	25	62	State, County/Local, Private/Other
	LCC5B	U	2	4	County/Local
	LCC5C	U	7	18	County/Local, Private/Other
	LCC5D	U	4	10	County/Local
	LCC5E	U	3	8	County/Local, Private/Other
	LCC5F	U	29	71	State, County/Local, Private/Other
	LCC5G	U	4	10	County/Local, Private/Other
	LCC5H	U	9	22	State, County/Local
	LCC5I	U	13	31	County/Local, Private/Other
	LCC5J	U	3	6	Private/Other
	<i>Unit Total</i>		98	242	
LCC6	LCC6A	U	1	3	Private/Other
	LCC6B	U	1	1	Private/Other
	LCC6C	U	1	3	State, Private/Other
	LCC6D	O	8	19	State, County/Local
	LCC6E	U	30	74	County/Local, Private/Other
	LCC6F	U	1	2	Private/Other
	LCC6G	U	4	9	County/Local, Private/Other
	LCC6H	U	5	13	County/Local, Private/Other
	LCC6I	U	<1	1	Private/Other
	LCC6J	O	2	4	County/Local, Private/Other
	LCC6K	U	14	35	County/Local, Private/Other
	LCC6L	U	5	12	County/Local, Private/Other
	LCC6M	U	4	10	State, County/Local, Private/Other
	LCC6N	U	13	32	County/Local, Private/Other
	LCC6O	U	7	17	State, County/Local, Private/Other
	LCC6P	U	1	3	County/Local, Private/Other
	LCC6Q	U	1	4	County/Local, Private/Other
	LCC6R	U	6	15	State, County/Local, Private/Other
	LCC6S	U	11	28	County/Local, Private/Other
	LCC6T	U	7	16	County/Local, Private/Other

Unit	Subunit	Occupancy	Hectares	Acres	Land Ownership by Type <sup>1</sup>
	LCC6U	U	6	15	County/Local, Private/Other
	Unit Total		128	315	
LCC7	LCC7A	U	11	27	County/Local, Private/Other
	LCC7B	U	4	9	County/Local, Private/Other
	LCC7C	U	8	20	State, County/Local
	LCC7D	U	7	18	State, County/Local, Private/Other
	LCC7E	U	16	39	County/Local, Private/Other
	LCC7F	U	145	359	State, County/Local, Private/Other
	LCC7G	U	11	26	State, County/Local, Private/Other
	Unit Total		201	497	
Total CH			1,072	2,649	

Note: Area sizes may not sum due to rounding

<sup>1</sup> Ownership information based on Miami-Dade County parcel data (July 2013) and FNAI's Florida Managed Lands data (March 2014).

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for *Linum carteri* var. *carteri*, below.

*Unit LCC1: Trinity Pineland and surrounding areas, Miami-Dade County, Florida*

Unit LCC1 consists of 19 ac (48 ha) in Miami-Dade County. Within Unit LCC1, there are three subunits – LCC1A and LCC1B (primarily County-owned), and LCC1C (combination of State lands and private ownership). The unit is comprised of State lands within Trinity Pineland County Park (4 ac (10 ha)); County lands primarily within Tropical Park and A. D. “Doug” Barnes Park (7 ha (18 ac)); and parcels in private ownership (8 ha (19 ac)). This unit is bordered on the north by SW 24 Street, on the south by the Snapper Creek Expressway (State Road (SR) 878), on the east by SW 67

Avenue, and on the west by SW 87 Avenue. The unit is within the historical range of *Linum carteri* var. *carteri*, although data are lacking regarding historical occupancy of the specific critical habitat patches in the unit. This unit includes the only remaining pine rockland habitat in this northern portion of the Miami Rock Ridge.

This unit was unoccupied by *Linum carteri* var. *carteri* at the time of listing but is essential to the conservation of the plant because it serves to protect habitat needed to recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c.* var. *carteri* be extirpated from one of its current locations.

*Unit LCC2: Nixon Smiley Pineland Preserve and surrounding areas, Miami-Dade County, Florida*

Unit LCC2 consists of approximately 113 ha (278 ac) of habitat in Miami-Dade County. Within Unit LCC2, there are six subunits (LCC2A–LCC2F) comprising primarily conservation lands and including four larger areas plus two smaller areas. The unit is comprised of State lands within Camp Matecumbe, Tamiami Pineland Complex Addition, and Rockdale Pineland (53 ha (131 ac)); County/local lands within Nixon Smiley Pineland Preserve, Tamiami #8 (Nixon Smiley Addition) Pineland, Pine Shore Pineland Preserve, Ron Ehman Park, and Rockdale Pineland Addition (59 ha (147 ac)); and parcels in private or other ownership (<1 ha (<1 ac)). This unit is bordered on the

north by SW 104 Street, on the south by SW 152 Street (Coral Reef Drive), on the east by U.S. 1 (South Dixie Highway), and on the west by SW 177 Avenue (Krome Avenue).

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Linum carteri* var. *carteri* (one occurrence; approximately 16 ha (39 ac)) at the time of listing. This occupied habitat contains some or all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat fragmentation; inadequate fire management; competition with nonnative, invasive plants; and sea level rise. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Unoccupied habitat within the unit is essential to the conservation of *Linum carteri* var. *carteri* because it serves to protect habitat needed to recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c.* var. *carteri* be extirpated from one of its current locations.

*Unit LCC3: USDA Subtropical Horticultural Research Station and surrounding areas, Miami-Dade County, Florida*

Unit LCC3 consists of approximately 128 ha (316 ac) of habitat in Miami-Dade County. Within Unit LCC3, there are nine subunits (LCC3A–LCC3I), including two larger areas (USDA and Deering Estate at Cutler) plus seven smaller areas surrounding these. The unit is comprised of Federal lands within the USDA Subtropical Horticultural Research Station (59 ha (145 ac)); State lands within the R. Hardy Matheson Preserve, Ludlam Pineland, Deering Estate at Cutler, and Deering Estate South Addition (45 ha (112 ac)); County/local lands within Coral Reef Park, Ned Glenn Nature Preserve, and Bill Sadowski Park (15 ha (38 ac)); and parcels in private ownership (8 ha (21 ac)). This unit is bordered on the north by SW 112 Street, on the south by the intersection of Old Cutler Road and Franjo Road (County Road (CR) 977), on the east by the Atlantic Ocean, and on the west by U.S. 1 (South Dixie Highway).

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Linum carteri* var. *carteri* (three occurrences; approximately 62 ha (153 ac)) at the time of listing. This occupied habitat contains some or all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat loss and fragmentation; inadequate fire management; competition with nonnative, invasive plants; and sea level rise, including storm surge. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Unoccupied habitat within the unit is essential to the conservation of *Linum carteri* var. *carteri* because it serves to protect habitat needed to recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c.* var. *carteri* be extirpated from one of its current locations.

*Unit LCC4: Richmond Pinelands and surrounding areas, Miami-Dade County, Florida*

Unit LCC4 consists of approximately 386 ha (952 ac) in Miami-Dade County. Within Unit LCC4, there are four subunits (LCC4A–LCC4D), primarily within the Richmond Pinelands complex (made up of Federal and County-owned lands, as well as land owned by the University of Miami). The unit is comprised of Federal lands owned by USCG, ACOE, U.S. Prison Bureau, and NOAA (75 ha (185 ac)); County/local lands within and adjacent to Larry and Penny Thompson Park, Martinez Pineland, Zoo Miami, and Eachus Pineland (240 ha (592 ac)); and parcels in private or other ownership (71 ha (175 ac)). This unit is bordered on the north by SW 152 Street (Coral Reef Drive), on the south by SW 200 St (Quail Drive/SR 994), on the east by U.S. 1 (South Dixie Highway), and on the west by SW 177 Avenue (Krome Avenue).

This unit was unoccupied by *Linum carteri* var. *carteri* at the time of listing but is essential to the conservation of the plant because it serves to protect habitat needed to

recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c. var. carteri* be extirpated from one of its current locations.

*Unit LCC5: Quail Roost Pineland and surrounding areas, Miami-Dade County, Florida*

Unit LCC5 consists of approximately 98 ha (242 ac) in Miami-Dade County. Within Unit LCC5, there are 10 subunits (LCC5A–LCC5J), including 4 larger areas plus 6 smaller areas surrounding these. The unit is comprised of State lands within Quail Roost Pineland, Goulds Pineland and Addition, and Silver Palm Groves Pineland (39 ha (97 ac)); County/local lands including Medsouth Park, Black Creek Forest, Rock Pit #46, and lands owned by the School Board of Miami-Dade County (18 ha (44 ac)); and parcels in private ownership (41 ha (101 ac)), including Porter-Russell Pineland owned by the Tropical Audubon Society. This unit is bordered on the north by SW 200 St (Quail Drive/SR 994), on the south by SW 248 Street, on the east by the Florida Turnpike, and on the west by SW 194 Avenue.

This unit was unoccupied by *Linum carteri* var. *carteri* at the time of listing but is essential to the conservation of the plant because it serves to protect habitat needed to recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c.*

var. *carteri* be extirpated from one of its current locations.

*Unit LCC6: Camp Owaissa Bauer and surrounding areas, Miami-Dade County, Florida*

Unit LCC6 consists of approximately 128 ha (315 ac) of habitat in Miami-Dade County. Within Unit LCC6, there are 21 subunits (LCC6A–LCC6U), composed of 1 larger area (Camp Owaissa Bauer and its addition) and 20 smaller areas surrounding it. The unit is comprised of State lands within Owaissa Bauer Pineland Addition, Ingram Pineland, West Biscayne Pineland, and Fuchs Hammock Addition (20 ha (51 ac)); County/local lands including Camp Owaissa Bauer, Pine Island Lake Park, Seminole Wayside Park, and Northrop Pineland (63 ha (156 ac)); and parcels in private ownership (44 ha (109 ac)), including the private conservation area, Pine Ridge Sanctuary. This unit is bordered on the north by SW 248 Street, on the south by SW 312 Street, on the east by SW 112 Avenue, and on the west by SW 217 Avenue.

This unit is composed of both occupied and unoccupied habitat. Some habitat within the unit was occupied by *Linum carteri* var. *carteri* (2 occurrences; approximately 9 ha (23 ac)) at the time of listing. This occupied habitat contains some or all of the PCEs, including pine rockland habitat, oolitic limestone substrate, suitable vegetation composition and structure, natural or artificial disturbance regimes, and habitat connectivity of sufficient size and suitability. The PCEs in this unit may require special management considerations or protection to address threats of habitat loss and fragmentation; inadequate fire management; competition with nonnative, invasive plants;



and sea level rise. In some cases, these threats are being addressed or coordinated with our partners and landowners to implement needed actions.

Unoccupied habitat within the unit is essential to the conservation of *Linum carteri* var. *carteri* because it serves to protect habitat needed to recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c.* var. *carteri* be extirpated from one of its current locations.

*Unit LCC7: Navy Wells Pineland Preserve and surrounding areas, Miami-Dade County, Florida*

Unit LCC7 consists of approximately 201 ha (497 ac) of habitat in Miami-Dade County. Within Unit LCC7, there are seven subunits (LCC7A–LCC7G), including one larger area (Navy Wells Pineland Preserve) and six smaller outlying areas. The unit is comprised of State lands within Palm Drive Pineland, Navy Wells Pineland #39, Navy Wells Pineland Preserve (portion), and Florida City Pineland (53 ha (132 ac)); County/local lands including primarily Sunny Palms Pineland and Navy Wells Pineland Preserve (portion) (125 ha (309 ac)); and parcels in private ownership (23 ha (56 ac)). This unit is bordered on the north by SW 320 Street, on the south by SW 368 Street, on the east by U.S. 1 (South Dixie Highway), and on the west by SW 217 Avenue.

This unit was unoccupied by *Linum carteri* var. *carteri* at the time of listing but is essential to the conservation of the plant because it serves to protect habitat needed to recover the plant, reestablish wild populations within the plant's historical range, and maintain populations throughout the plant's historical distribution in Miami-Dade County. It also provides habitat for recovery in the case of stochastic events, should *L. c.* var. *carteri* be extirpated from one of its current locations.

### **Effects of Critical Habitat Designation**

#### *Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5<sup>th</sup> and 9<sup>th</sup> Circuit Courts of Appeal have invalidated our regulatory definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9<sup>th</sup> Cir.

2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434 (5<sup>th</sup> Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation

on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

#### *Application of the “Adverse Modification” Standard*

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri*. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such

designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for *Brickellia mosieri* and *Linum carteri* var. *carteri*. These activities include, but are not limited to:

(1) Actions that would significantly alter the pine rockland ecosystem, including significant alterations to hydrology or substrate. Such activities may include, but are not limited to, residential, commercial, or recreational development, including associated infrastructure.

(2) Actions that would significantly alter vegetation structure or composition, such as suppression of natural fires or excessive prescribed burning, or clearing vegetation for construction of residential, commercial, or recreational development and associated infrastructure.

(3) Actions that would introduce nonnative plant species that would significantly alter vegetation structure or composition. Such activities may include, but are not limited to, residential and commercial development, and associated infrastructure.

## **Exemptions**

*Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these ecological needs; and
- (4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are

subject to an INRMP prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

We consulted with the military on the development and implementation of INRMPs for installations with listed species. We analyzed INRMPs developed by military installations located within the range of our proposed critical habitat designation for *B. mosieri* and *L. c. var. carteri* to determine if they met the criteria for exemption from critical habitat under section 4(a)(3) of the Act. We found that the following areas are Department of Defense lands with completed, Service-approved INRMPs within the range of the proposed critical habitat designation.

#### Homestead Air Reserve Base – Unit LCC6

The Homestead Air Reserve Base (HARB) has a current and completed INRMP, signed in July 2009. This INRMP identifies goals, objectives, and strategies for the management of HARB’s natural resources for a 5-year period (i.e., through 2014), and provides environmental stewardship initiatives for the remaining natural communities on HARB, including pine rocklands, as well as efforts to control invasive and nonnative animal and plant species. The INRMP (including appendices) identifies a “Remnant Pine Rockland” management unit (2.1 ha (5.1 ac)), which includes the unoccupied habitat patch proposed for critical habitat designation for *Linum carteri* var. *carteri* (subunit LCC6V; 1.0 ha (2.5 ac)) in the revised proposed rule and availability of the draft



economic analysis published in the **Federal Register** on July 15, 2014 (79 FR 41211). The INRMP briefly discusses management recommendations for this area including mechanical reduction of fuel load, herbicide treatment of *Neyraudia reynaudiana* (Burma reed), and potential reforestation of canopy species. The INRMP identifies one objective for the remnant pine rockland: to restore and protect the habitat to support native plant communities and associated wildlife, including endangered and threatened species' habitat. To achieve this objective, the INRMP proposes the development of a Pine Rockland Restoration and Management Plan (PRRMP) to include invasive and nonnative species removal.

An updated INRMP has been drafted and is expected to be finalized by the time this final critical habitat rule publishes in the **Federal Register** or shortly thereafter. The revised INRMP incorporates the PRRMP, which was finalized in September 2012, as well as a Protected Plant Management Plan (PPMP). The updated INRMP goals include implementation of both plans, which consist of restoring the pine rockland management unit to natural conditions by removing invasive and nonnative plants and animals, reintroducing extirpated native species, preventing pollution, and conducting various maintenance and monitoring procedures. The PPMP is used to supplement and update the INRMP, and currently focuses on measures to manage habitat for *Galactia smallii* (Small's milkpea), *Linum arenicola* (sand flax), and State-protected plant species occurring on HARB. The PPMP states that if *Brickellia mosieri* or *Linum carteri* var. *carteri* are identified on HARB, the PPMP will be revised to include these plants and appropriate management and monitoring activities will be implemented.

The current HARB INRMP benefits *Linum carteri* var. *carteri* through ongoing ecosystem management, which should provide suitable habitat for this plant. Specifically, the PPMP includes control of woody and herbaceous invasive pest plants, which would support suitable habitat for *L. c.* var. *carteri* by helping ensure a more open canopy. In addition, the INRMP includes continued mowing and “weed whacking,” which function as a surrogate for periodic fires by reducing competition with weedy species and helping to maintain an open canopy. While these activities are proposed to continue at the current frequencies, weed whacking would be raised to 15 cm (6 in) above the ground to avoid cutting *L. arenicola* too low—this would also benefit *L. c.* var. *carteri*, which has a similar life history and response to mowing, if it were to occur there. (For an indepth discussion related to the effects of invasive, nonnative plants and mowing on *L. c.* var. *carteri*, see **Summary of Factors Affecting the Species** in our proposed listing rule published in the **Federal Register** on October 3, 2013 (78 FR 61273), and as updated in our final listing rule published in the **Federal Register** on September 4, 2014 (79 FR 52567)).

Based on the above considerations, and in accordance with section 4(a)(3)(B)(i) of the Act, we have determined that the identified lands are subject to the HARB INRMP and that conservation efforts identified in the INRMP will provide a benefit to *Linum carteri* var. *carteri*. Therefore, lands within this installation are exempt from critical habitat designation under section 4(a)(3) of the Act. We are not including approximately

1.0 ha (2.5 ac) of habitat in this final critical habitat designation because of this exemption.

#### Special Operations Command South Headquarters – Units BM6 and LCC6

The U.S. Special Operations Command South Headquarters (SOC SO) has an INRMP that was finalized in December 2014. SOC SO is a 34.1-ha (84.2-ac) property that was formerly part of HARB and is now leased by SOC SO from Miami-Dade County. The SOC SO INRMP provides natural resource management for portions of this property for a 5-year period (2012-2017), focusing on the management of *Galactia smallii* and *Linum arenicola*. In part, the INRMP designates two pine rockland management areas, totaling approximately 7.2 ha (17.9 ac), that will be conserved and managed, including permanent fencing of the areas, invasive plant control, mowing, and prescribed burning. These designated management areas include the unoccupied habitat patches proposed for critical habitat designation for *Brickellia mosieri* (subunit BM6M; 5.2 ha (12.9 ac)) and *Linum carteri* var. *carteri* (subunit LCC6W; totaling 6.0 ha (14.8 ac)) in the revised proposed rule and availability of the draft economic analysis published in the **Federal Register** on July 15, 2014 (79 FR 41211).

The SOC SO INRMP benefits *Brickellia mosieri* and *Linum carteri* var. *carteri* through ongoing ecosystem management, which should provide suitable habitat for these plants. Although conservation benefits and management for *Galactia smallii* and *Linum arenicola* are the focus of the INRMP, some protection and conservation for other native

pine rockland plant species (including *B. mosieri* and *L. c. var. carteri*, if they were to occur there) will be provided by the use of prescribed fire and invasive species control including herbicide treatments used to benefit *G. smallii* and *L. arenicola*. Prescribed fire is proposed in the management areas on a 4- to 7-year interval, the year following the herbicide treatment if weather conditions permit. In addition, proposed protocols for mowing of the inside perimeter of the management areas would benefit *L. c. var. carteri*. Where *G. smallii* and *L. arenicola* occur within the fenced perimeter, winter mowing (mid-January to mid-February) would avoid primary seed set by these species and *L. c. var. carteri*, if it were to occur there. In addition, where invasive and nonnative species occur in the mowed area, a broadcast herbicide would be applied to the areas with exotic species approximately 1 month after mowing, further reducing competition and helping to ensure an open canopy.

Based on the above considerations, and in accordance with section 4(a)(3)(B)(i) of the Act, we have determined that the identified lands are subject to the SOCSO INRMP and that conservation efforts identified in the INRMP will provide a benefit to *Brickellia mosieri* and *Linum carteri* var. *carteri*. Therefore, lands within this installation are exempt from critical habitat designation under section 4(a)(3) of the Act. We are not including approximately 6.0 ha (14.8 ac) of habitat in this final critical habitat designation because of this exemption.

#### **Consideration of Impacts under Section 4(b)(2) of the Act**

Under Section 4(b)(2) of the Act, the Secretary may exclude an area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless she determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

### **Exclusions Based on Economic Impacts**

Under section 4(b)(2) of the Act, we must consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM) and screening analysis (Industrial Economics, Incorporated, 2014) which together with our narrative and interpretation of effects constitute our draft economic analysis (DEA) of the critical habitat designation and related factors. This analysis was made available for public review from July 15, 2014, through August 14, 2014. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. This information is summarized below and available in the screening analysis for *Brickellia mosieri* and *Linum carteri* var. *carteri* (Industrial Economics, Incorporated, 2014), available at <http://www.regulations.gov>.

In our IEM, we attempted to clarify the distinction between the effects that will result from the species being listed and those attributable to the critical habitat designation (i.e., difference between the jeopardy and adverse modification standards) for *Brickellia mosieri* and *Linum carteri* var. *carteri*'s critical habitat. Because the designations of critical habitat for *B. mosieri* and *L.c.* var. *carteri* were proposed concurrently with the listing, it has been our experience that it is more difficult to discern which conservation efforts are attributable to the species being listed and those which will result solely from the designation of critical habitat. However, the following specific circumstances in this case help to inform our evaluation: (1) The PBFs identified for critical habitat are the same features essential for the life requisites of the species, and (2) any actions that would result in sufficient harm or harassment to constitute jeopardy to *B. mosieri* and *L. c.* var. *carteri* would also likely adversely affect the essential physical and biological features of critical habitat. The IEM outlines our rationale concerning this limited distinction between baseline conservation efforts and incremental impacts of the designation of critical habitat for this species. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of the designation of critical habitat.

In occupied areas, the economic impacts of implementing the rule through section 7 of the Act will most likely be limited to additional administrative effort to consider adverse modification. This finding is based on the following factors:

- Any activities with a Federal nexus occurring within occupied habitat will be subject to section 7 consultation requirements regardless of critical habitat designation, due to the presence of the listed species; and
- In most cases, project modifications requested to avoid adverse modification are likely to be the same as those needed to avoid jeopardy in occupied habitat.

In unoccupied areas, incremental section 7 costs will include both the administrative costs of consultation and the costs of developing and implementing conservation measures needed to avoid adverse modification of critical habitat. Therefore, this analysis focuses on the likely impacts to activities occurring in unoccupied areas of the critical habitat designation.

This analysis forecasts the total number and administrative cost of future consultations likely to occur for transportation and land management activities undertaken by or funded by Federal agencies within unoccupied habitat. In addition, the analysis forecasts costs associated with conservation efforts that may be recommended in consultation for those activities occurring in unoccupied areas. The total incremental section 7 costs associated with the designation are estimated to be \$120,000 (2013 dollars) in a single year for both administrative and conservation effort costs.

The designation of critical habitat is unlikely to trigger additional requirements under State or local regulations. This assumption is based on the protective status currently afforded pine rocklands habitat. Additionally, the designation of critical habitat

may cause developers to perceive that private lands will be subject to use restrictions, resulting in perceptual effects. Such costs, if they occur, are unlikely to result in costs reaching \$100 million in any one year.

Our economic analysis did not identify any disproportionate costs that are likely to result from the designation. Consequently, the Secretary is not exercising her discretion to exclude any areas from this designation of critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri* based on economic impacts.

A copy of the IEM and screening analysis with supporting documents may be obtained by contacting the South Florida Ecological Services Field Office (see **ADDRESSES**) or by downloading from the Internet at <http://www.regulations.gov>.

#### *Exclusions Based on National Security Impacts or Homeland Security Impacts*

As discussed above, we have already exempted from the designation of critical habitat under Section 4(a)(3) of the Act those Department of Defense lands with completed INRMPs determined to provide a benefit to *Brickellia mosieri* and *Linum carteri* var. *carteri*. Under section 4(b)(2) of the Act, we consider whether there are other lands where a national security or homeland security impact might exist. In preparing this final rule, we have determined that additional lands within the proposed designation are owned or managed by the Department of Defense and the Department of Homeland Security. However, we anticipate that designation of these additional lands will have no



impact on national security or homeland security. Consequently, the Secretary is not intending to exercise her discretion to exclude any areas from this final designation based on impacts on national security or homeland security.

#### *Exclusions Based on Other Relevant Impacts*

Under section 4(b)(2) of the Act, we also consider any other relevant impacts resulting from the designation of critical habitat. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues and consider the government-to-government relationship of the United States with tribal entities.

In preparing this final rule, we have determined that there are currently no permitted HCPs or other approved management plans for *Brickellia mosieri* and *Linum carteri* var. *carteri*, and the final designation does not include any tribal lands or tribal trust resources. We anticipate no impact on tribal lands, partnerships, or HCPs from this critical habitat designation. Accordingly, the Secretary is not exercising her discretion to exclude any areas from this final designation based on other relevant impacts.

## **Required Determinations**

### *Regulatory Planning and Review (Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

### *Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by

the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 *et seq.*), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term

“significant economic impact” is meant to apply to a typical small business firm’s business operations.

The Service’s current understanding of the requirements under the RFA, as amended, and following recent court decisions, is that Federal agencies are only required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself, and therefore, not required to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7 only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this designation. There is no requirement under RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities are directly regulated by this rulemaking, the Service certifies that this final critical habitat designation will not have a significant economic impact on a substantial number of small entities. Therefore, a regulatory flexibility analysis is not required.

*Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. Following our evaluation of the probable incremental economic impacts resulting from the designation of critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri*, we affirm the information in our proposed rule concerning E.O. 13211. Specifically, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or

more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would

critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because it will not produce a Federal mandate of \$100 million or greater in any year, that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The economic analysis concludes that incremental impacts may primarily occur due to administrative costs of section 7 consultations for transportation and land management projects; however, these are not expected to significantly affect small governments. Incremental impacts stemming from various species conservation and development control activities are expected to be borne by the Federal Government, State of Florida, and Miami-Dade County, which are not considered small governments. Consequently, we do not believe that the critical habitat designation will significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

#### *Takings—Executive Order 12630*

In accordance with Executive Order 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), we have analyzed the potential takings implications of designating critical habitat for *Brickellia mosieri* and *Linum carteri* var. *carteri* in a takings implications assessment. As discussed above, the designation of critical habitat affects only Federal actions. Although private parties that

receive Federal funding, assistance, or require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. The economic analysis found that no significant economic impacts are likely to result from the designation of critical habitat for *B. mosieri* and *L. c. var. carteri*. Because the Act's critical habitat protection requirements apply only to Federal agency actions, few conflicts between critical habitat and private property rights should result from this designation. Based on the best available information, the takings implications assessment concludes that this designation of critical habitat for *B. mosieri* and *L. c. var. carteri* does not pose significant takings implications.

#### *Federalism—Executive Order 13132*

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this critical habitat designation with, appropriate State resource agencies in Florida. We did not receive comments from the State of Florida. We note, however, that one peer reviewer was from the Florida Forest Service, Florida Department of Agriculture and Consumer Services, and we have addressed those comments in the **Summary of Comments and Recommendations** section of this rule. From a federalism perspective, the designation of critical habitat



directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical and biological features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist these local governments in long-range planning (because these local governments no longer have to wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the applicable standards set forth in sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of these plants, the rule identifies the elements of physical or biological features essential to the conservation of *Brickellia mosieri* and *Linum carteri* var. *carteri*. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (42 U.S.C. 4321 et seq.)*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the

Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

#### *Government-to-Government Relationship with Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

We have determined that there are no tribal lands occupied by *Brickellia mosieri* or *Linum carteri* var. *carteri* at the time of listing that contain the physical or biological

features essential to conservation of the species, and no tribal lands unoccupied by *B. mosieri* or *L. c. var. carteri* that are essential for the conservation of the species.

Therefore, we are not designating critical habitat for *B. mosieri* or *L. c. var. carteri* on tribal lands.

### **References Cited**

A complete list of all references cited is available on the Internet at <http://www.regulations.gov> and upon request from the South Florida Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Authors**

The primary authors of this rulemaking are the staff members of the South Florida Ecological Services Field Office.

### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

### **Regulation Promulgation**

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

**PART 17--[AMENDED]**

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 1531–1544; 4201–4245, unless otherwise noted.

2. Amend § 17.12(h) by revising the entries for “*Brickellia mosieri*” and “*Linum carteri* var. *carteri*” under FLOWERING PLANTS in the List of Endangered and Threatened Plants to read as follows:

**§ 17.12 Endangered and threatened plants.**

\* \* \* \* \*

(h) \* \* \*

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						

#### FLOWERING PLANTS

\* \* \* \* \*

<i>Brickellia mosieri</i>	Florida brickell-bush	U.S.A. (FL)	Asteraceae	E	844	17.96(a)	NA
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\* \* \* \* \*

<i>Linum carteri</i> var. <i>carteri</i>	Carter's small-flowered flax	U.S.A. (FL)	Linaceae	E	844	17.96(a)	NA
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3. In § 17.96, amend paragraph (a) as follows:

- a. By adding an entry for “*Brickellia mosieri* (Florida brickell-bush)” in alphabetical order under the family Asteraceae;
- b. By adding Family Linaceae in alphabetical order to the list of families; and
- c. By adding an entry for “*Linum carteri* var. *carteri* (Carter’s small-flowered flax)” in alphabetical order under the family Linaceae.

The additions read as follows:

**§ 17.96 Critical habitat—plants.**

(a) *Flowering plants.*

\* \* \* \* \*

Family Asteraceae: *Brickellia mosieri* (Florida brickell-bush)

(1) Critical habitat units for *Brickellia mosieri* are depicted for Miami-Dade County, Florida, on the maps in this entry.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of *Brickellia mosieri* are:

- (i) Areas of pine rockland habitat that contain:
  - (A) Open canopy, semi-open subcanopy, and understory;
  - (B) Substrate of oolitic limestone rock; and

(C) A plant community of predominately native vegetation that may include, but is not limited to:

(1) Canopy vegetation dominated by *Pinus elliottii* var. *densa* (South Florida slash pine);

(2) Subcanopy vegetation that may include, but is not limited to, *Serenoa repens* (saw palmetto), *Sabal palmetto* (cabbage palm), *Coccothrinax argentata* (silver palm), *Myrica cerifera* (wax myrtle), *Myrsine floridana* (myrsine), *Metopium toxiferum* (poisonwood), *Byrsonima lucida* (locustberry), *Tetrazygia bicolor* (tetrazygia), *Guettarda scabra* (rough velvetseed), *Ardisia escallonioides* (marlberry), *Psidium longipes* (mangroveberry), *Sideroxylon salicifolium* (willow bustic), and *Rhus copallinum* (winged sumac);

(3) Short-statured shrubs that may include, but are not limited to, *Quercus pumila* (running oak), *Randia aculeata* (white indigoberry), *Crossopetalum ilicifolium* (Christmas berry), *Morinda royoc* (redgal), and *Chiococca alba* (snowberry); and

(4) Understory vegetation that may include, but is not limited to: *Andropogon* spp.; *Schizachyrium gracile*, *S. rhizomatum*, and *S. sanguineum* (bluestems); *Aristida purpurascens* (arrowfeather threeawn); *Sorghastrum secundum* (lopsided Indiangrass); *Muhlenbergia capillaris* (hairawn muhly); *Rhynchospora floridensis* (Florida white-top sedge); *Tragia saxicola* (pineland noseburn); *Echites umbellata* (devil's potato); *Croton linearis* (pineland croton); *Chamaesyce* spp. (sandmats); *Chamaecrista deeringiana* (partridge pea); *Zamia integrifolia* (coontie); and *Anemia adiantifolia* (maidenhair pineland fern).



(ii) A disturbance regime that naturally or artificially duplicates natural ecological processes (e.g., fire, hurricanes, or other weather events) and that maintains the pine rockland habitat described in paragraph (2)(i) of this entry.

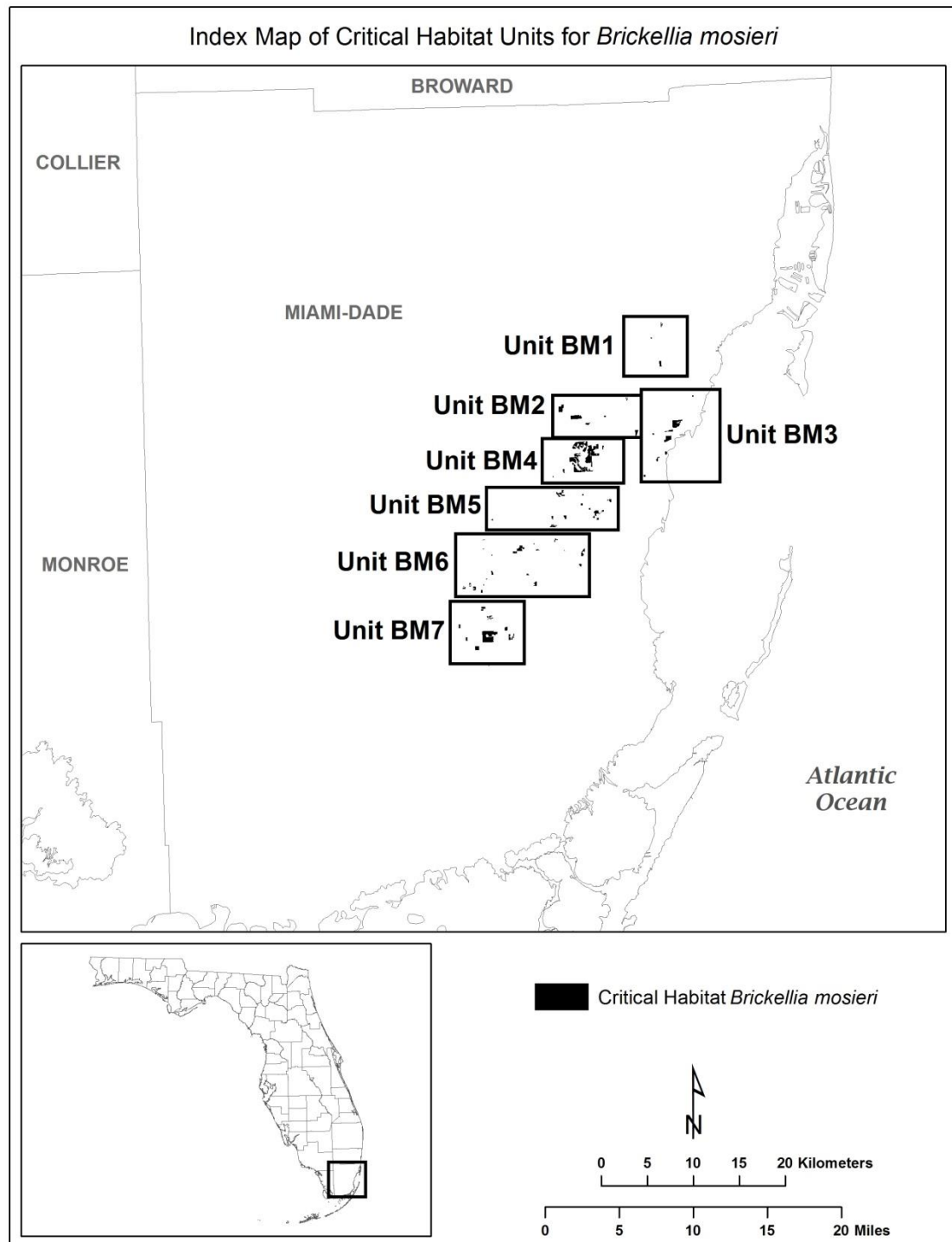
(iii) Habitats that are connected and of sufficient area to sustain viable populations of *Brickellia mosieri* in the pine rockland habitat described in paragraph (2)(i) of this entry.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located exists within the legal boundaries on [INSERT DATE 30 DAYS AFTER DATE OF FEDERAL REGISTER PUBLICATION].

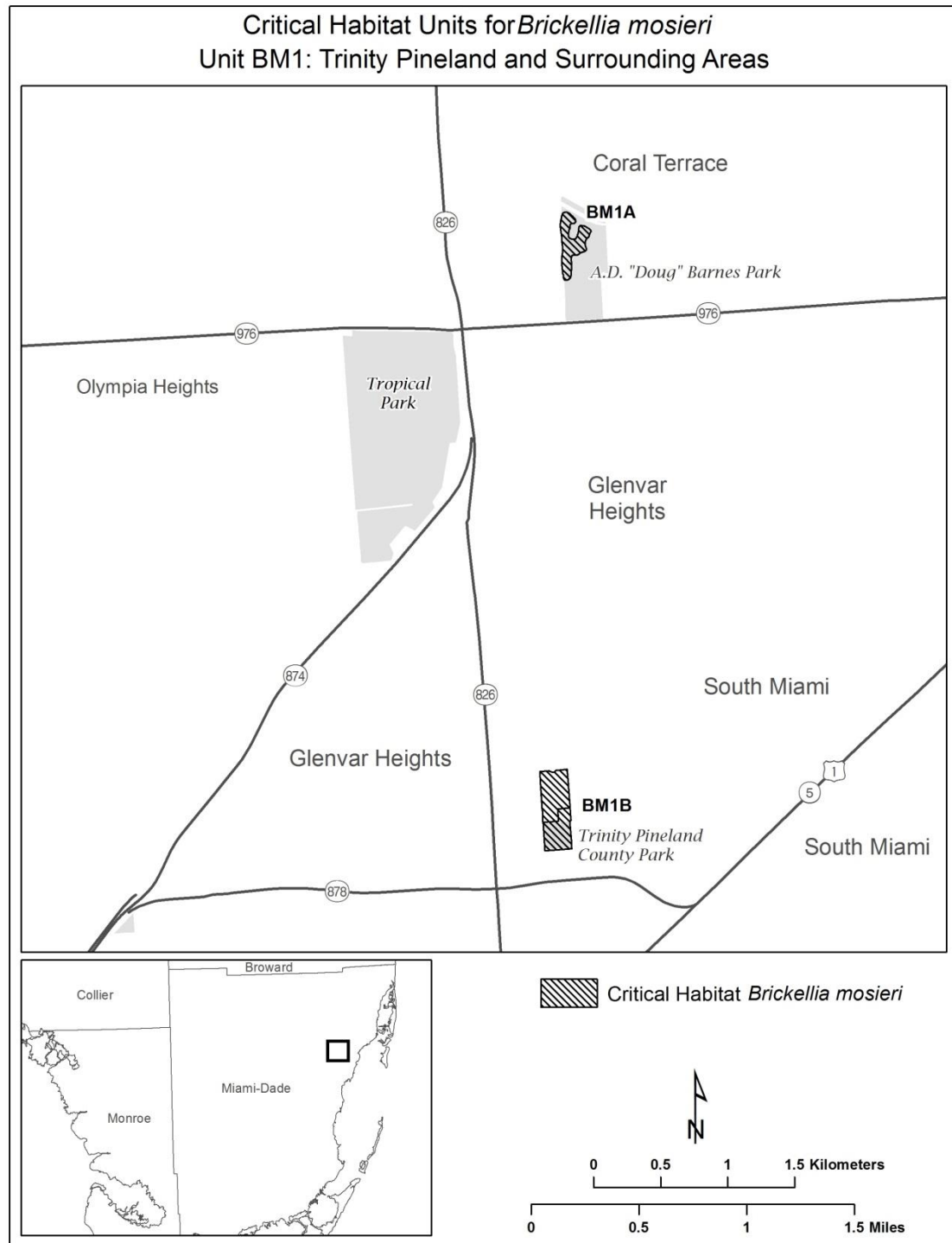
(4) *Critical habitat map units.* Unit maps were developed using ESRI ArcGIS mapping software along with various spatial data layers. ArcGIS was also used to calculate the size of habitat areas. The projection used in mapping and calculating distances and locations within the units was North American Albers Equal Area Conic, NAD 83. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at <http://www.fws.gov/verobeach/>, at the Federal eRulemaking Portal (<http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0108), and at the field office responsible for this designation. You may obtain field office location information

by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

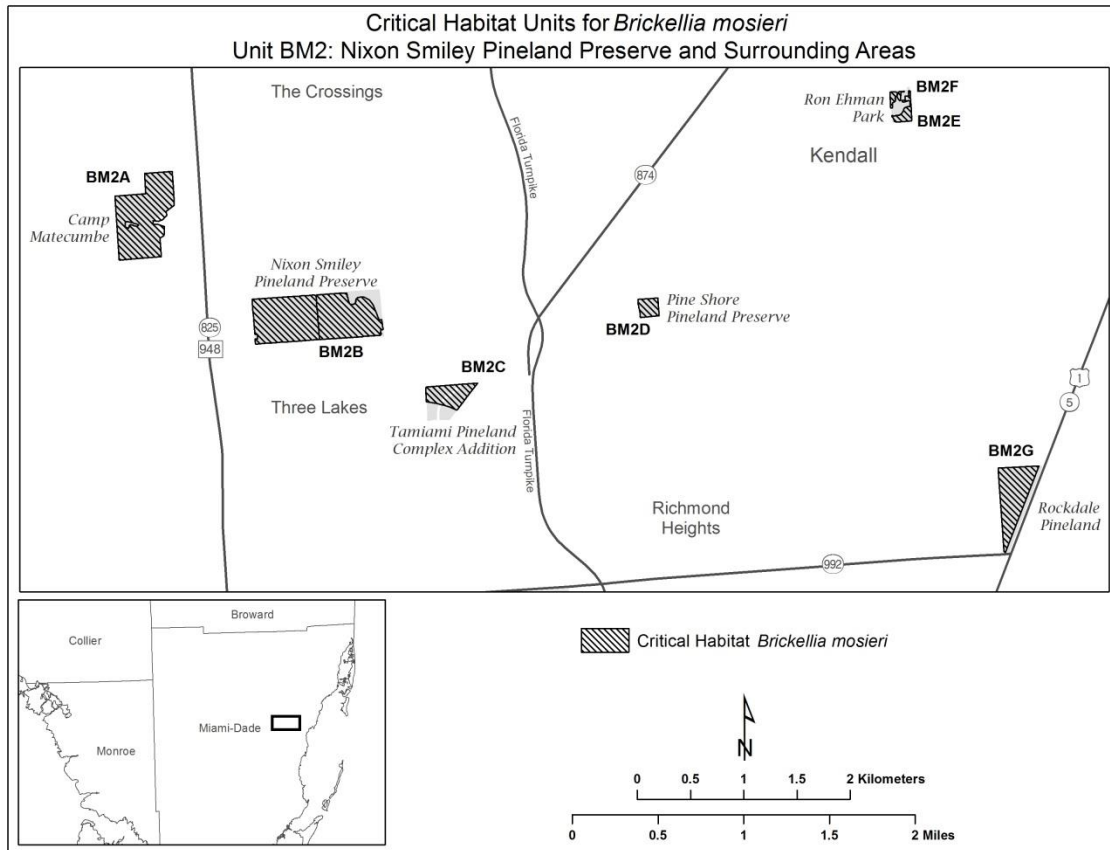
(5) Index map follows:



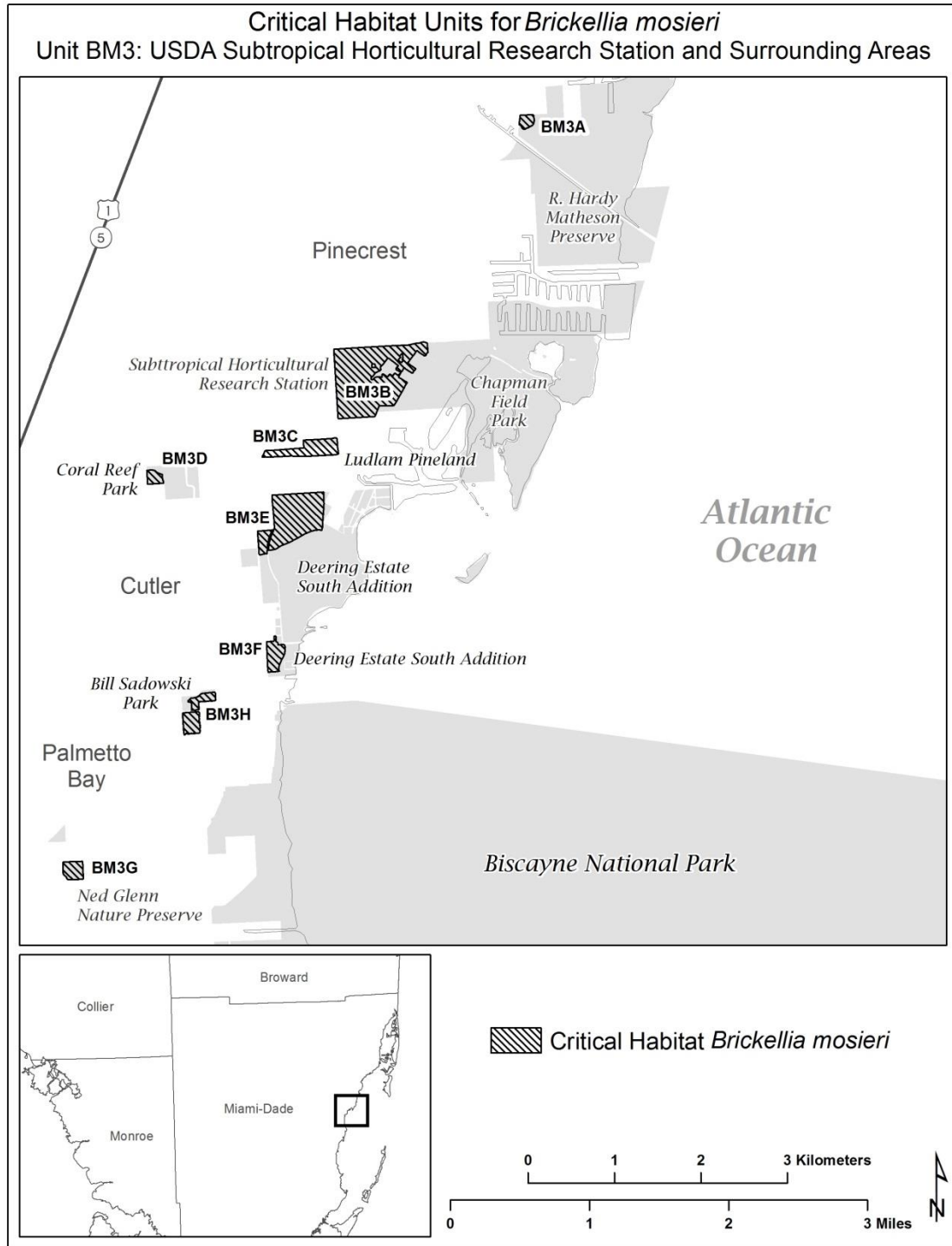
(6) Unit BM1: Trinity Pineland and surrounding areas, Miami-Dade County, Florida. Map of Unit BM1 follows:



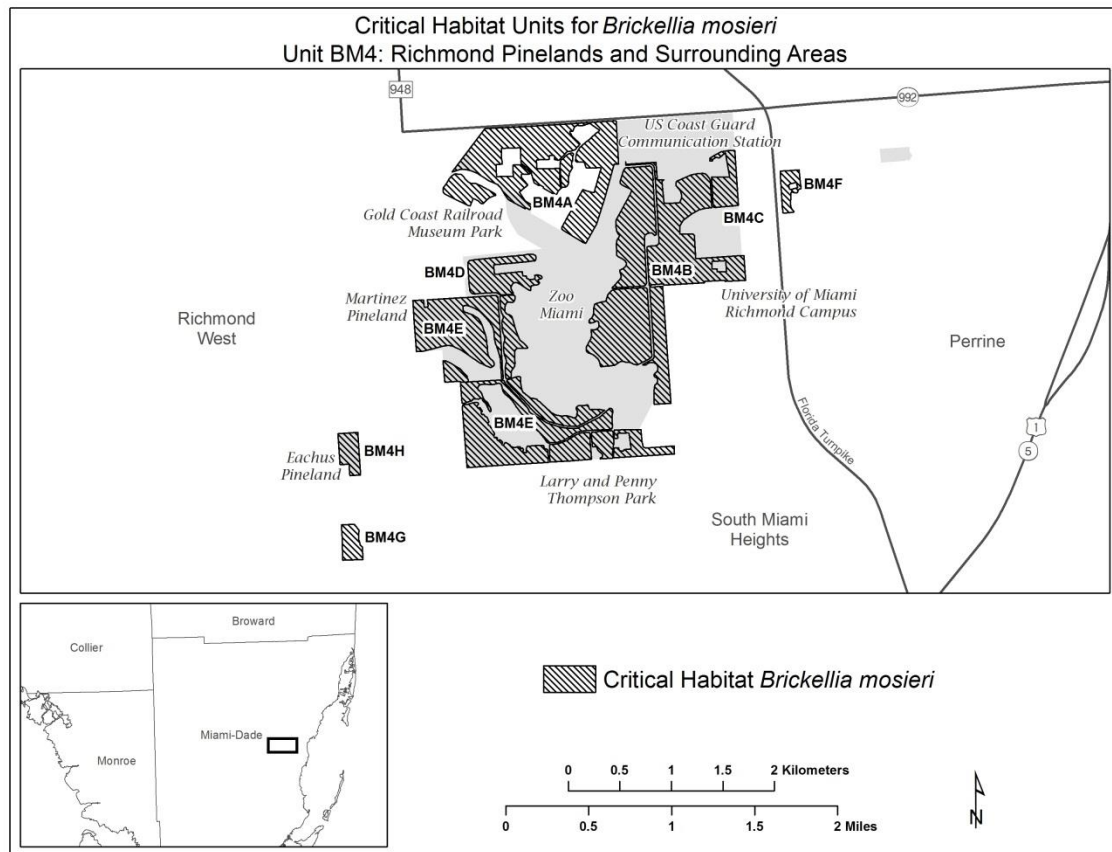
(7) Unit BM2: Nixon Smiley Pineland Preserve and surrounding areas, Miami-Dade County, Florida. Map of Unit BM2 follows:



(8) Unit BM3: USDA Subtropical Horticultural Research Station and surrounding areas, Miami-Dade County, Florida. Map of Unit BM3 follows:

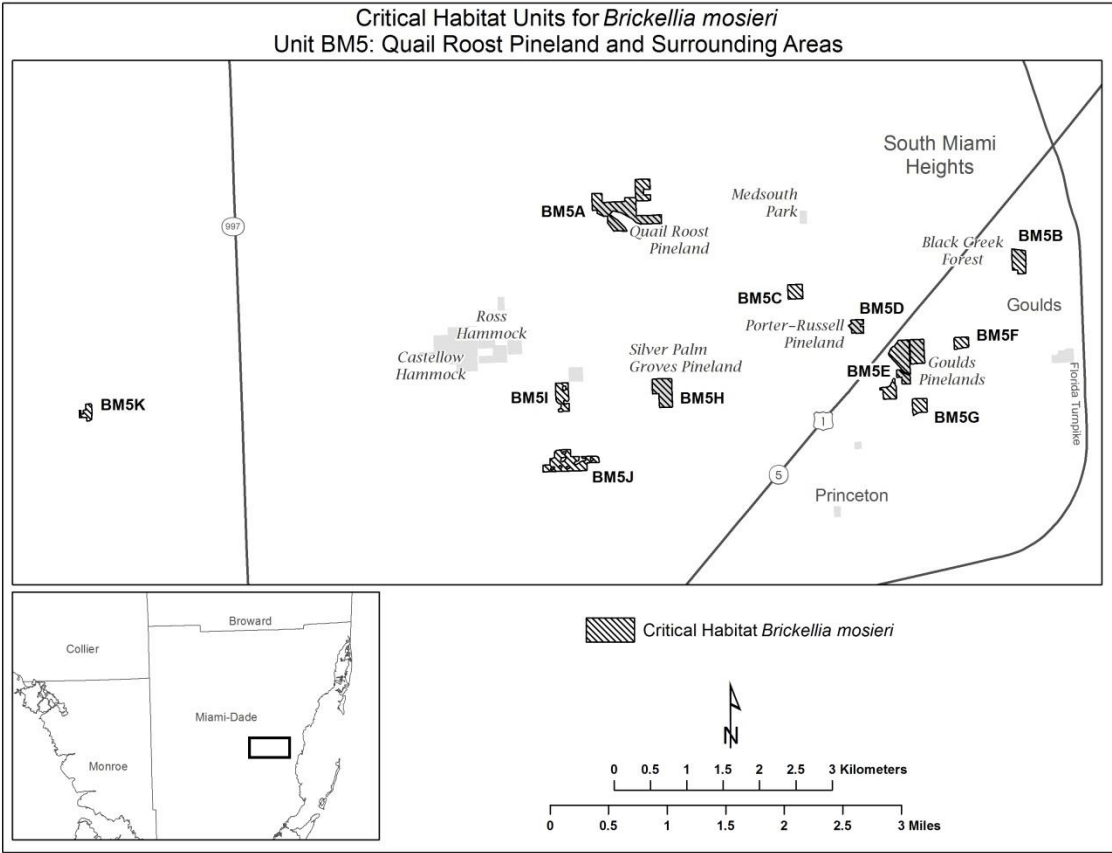


(9) Unit BM4: Richmond Pinelands and surrounding areas, Miami-Dade County, Florida. Map of Unit BM4 follows:



(10) Unit BM5: Quail Roost Pineland and surrounding areas, Miami-Dade

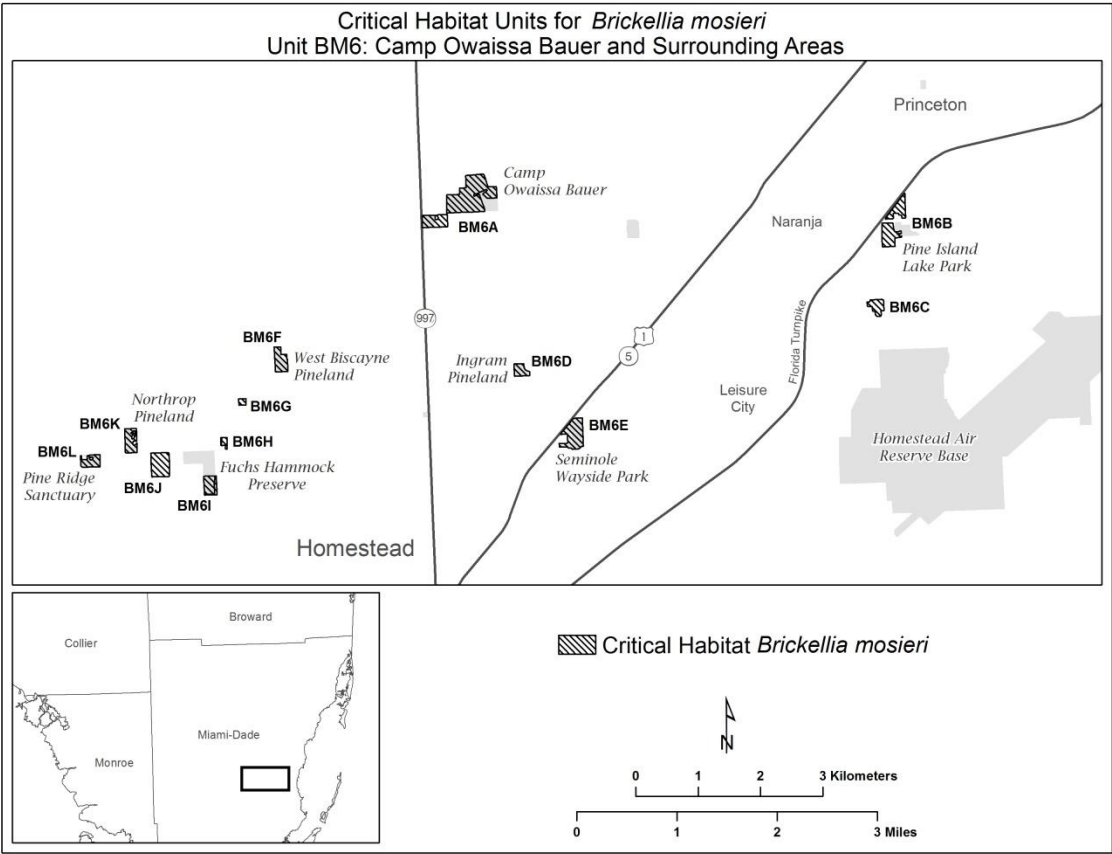
County, Florida. Map of Unit BM5 follows:



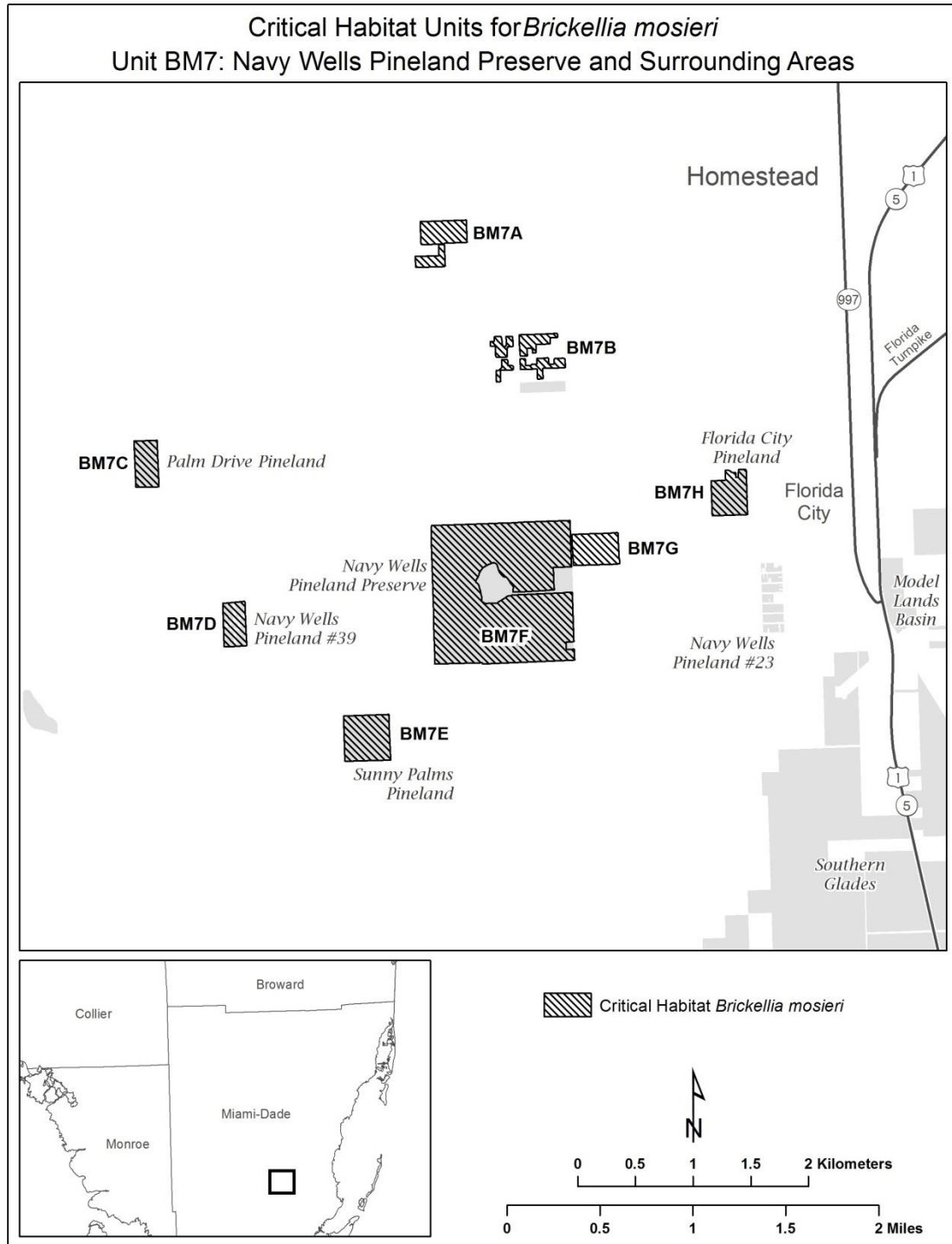


(11) Unit BM6: Camp Owaissa Bauer and surrounding areas, Miami-Dade

County, Florida. Map of Unit BM6 follows:



(12) Unit BM7: Navy Wells Pineland Preserve and surrounding areas, Miami-Dade County, Florida. Map of Unit BM7 follows:



\* \* \* \* \*

Family Linaceae: *Linum carteri* var. *carteri* (Carter's small-flowered flax)

(1) Critical habitat units for *Linum carteri* var. *carteri* are depicted for Miami-Dade County, Florida, on the maps in this entry.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of *Linum carteri* var. *carteri* are:

(i) Areas of pine rockland habitat that contain:

(A) Open canopy, semi-open subcanopy, and understory;

(B) Substrate of oolitic limestone rock; and

(C) A plant community of predominately native vegetation that may include, but is not limited to:

(1) Canopy vegetation dominated by *Pinus elliottii* var. *densa* (South Florida slash pine);

(2) Subcanopy vegetation that may include, but is not limited to, *Serenoa repens* (saw palmetto), *Sabal palmetto* (cabbage palm), *Coccothrinax argentata* (silver palm), *Myrica cerifera* (wax myrtle), *Myrsine floridana* (myrsine), *Metopium toxiferum* (poisonwood), *Byrsonima lucida* (locustberry), *Tetrazygia bicolor* (tetrazygia), *Guettarda scabra* (rough velvetseed), *Ardisia escallonioides* (marlberry), *Psidium longipes*

(mangroveberry), *Sideroxylon salicifolium* (willow bustic), and *Rhus copallinum* (winged sumac);

(3) Short-statured shrubs that may include, but are not limited to, *Quercus pumila* (running oak), *Randia aculeata* (white indigoberry), *Crossopetalum ilicifolium* (Christmas berry), *Morinda royoc* (redgal), and *Chiococca alba* (snowberry); and

(4) Understory vegetation that may include, but is not limited to: *Andropogon* spp.; *Schizachyrium gracile*, *S. rhizomatum*, and *S. sanguineum* (bluestems); *Aristida purpurascens* (arrowfeather threeawn); *Sorghastrum secundum* (lopsided Indiangrass); *Muhlenbergia capillaris* (hairawn muhly); *Rhynchospora floridensis* (Florida white-top sedge); *Tragia saxicola* (pineland noseburn); *Echites umbellata* (devil's potato); *Croton linearis* (pineland croton); *Chamaesyce* spp. (sandmats); *Chamaecrista deeringiana* (partridge pea); *Zamia integrifolia* (coontie); and *Anemia adiantifolia* (maidenhair pineland fern).

(ii) A disturbance regime that naturally or artificially duplicates natural ecological processes (e.g., fire, hurricanes, or other weather events) and that maintains the pine rockland habitat described in paragraph (2)(i) of this entry.

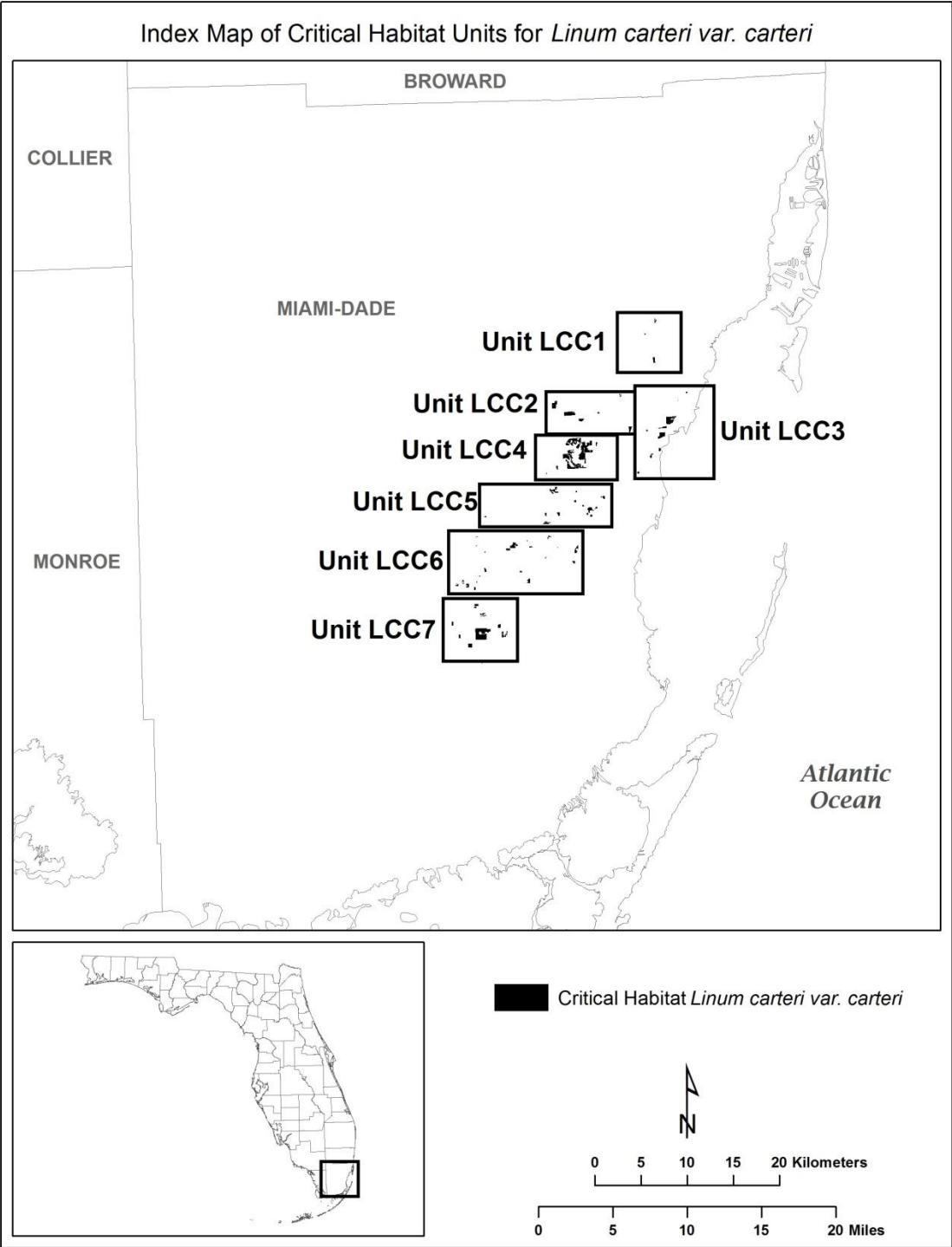
(iii) Habitats that are connected and of sufficient area to sustain viable populations of *Linum carteri* var. *carteri* in the pine rockland habitat described in paragraph (2)(i) of this entry.

(3) Critical habitat does not include manmade structures (such as buildings,

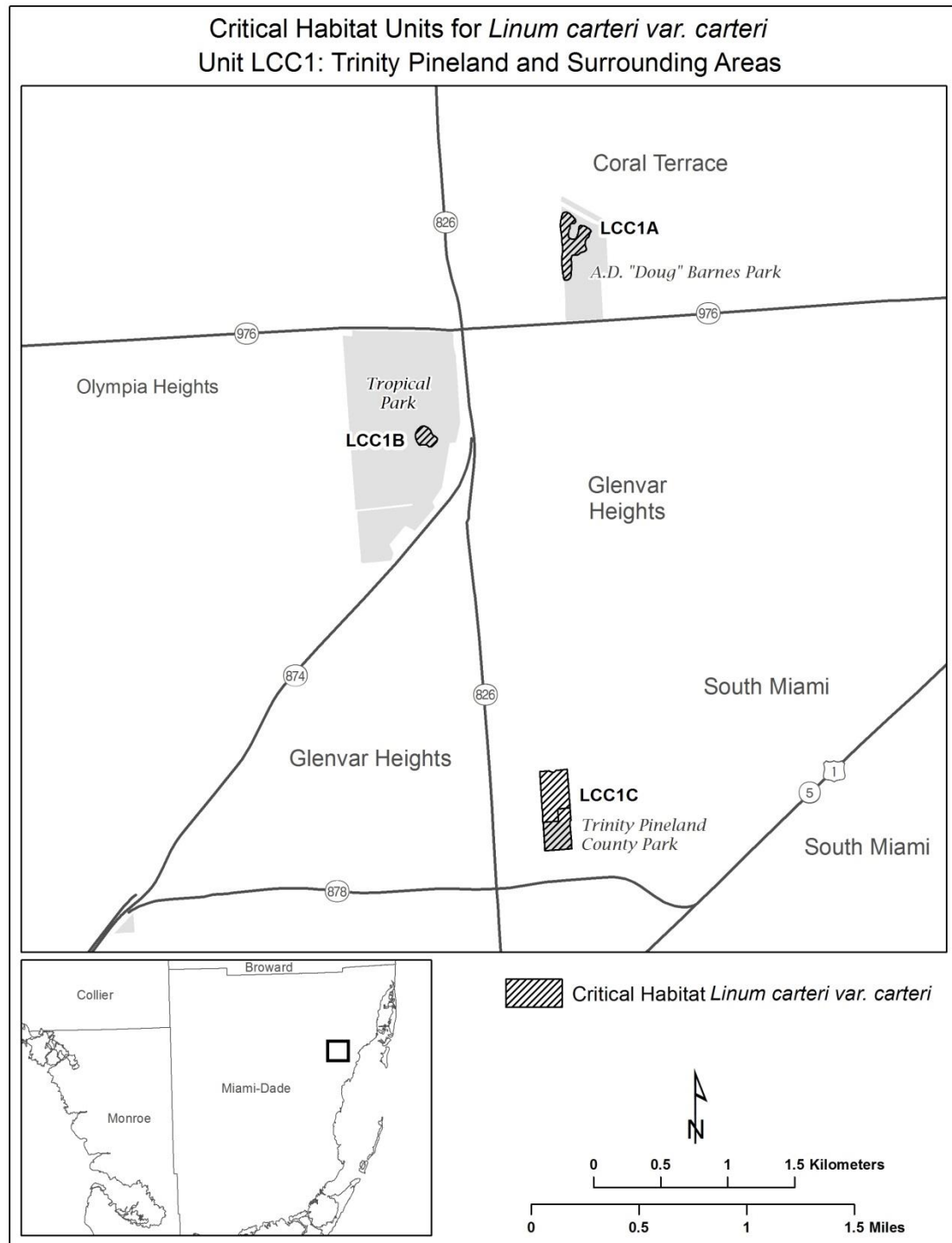
aqueducts, runways, roads, and other paved areas) and the land on which they are located exists within the legal boundaries on [**INSERT DATE 30 DAYS AFTER DATE OF  
FEDERAL REGISTER PUBLICATION**].

(4) *Critical habitat map units.* Unit maps were developed using ESRI ArcGIS mapping software along with various spatial data layers. ArcGIS was also used to calculate the size of habitat areas. The projection used in mapping and calculating distances and locations within the units was North American Albers Equal Area Conic, NAD 83. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at <http://www.fws.gov/verobeach/>, at the Federal eRulemaking Portal (<http://www.regulations.gov> at Docket No. FWS-R4-ES-2013-0108), and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

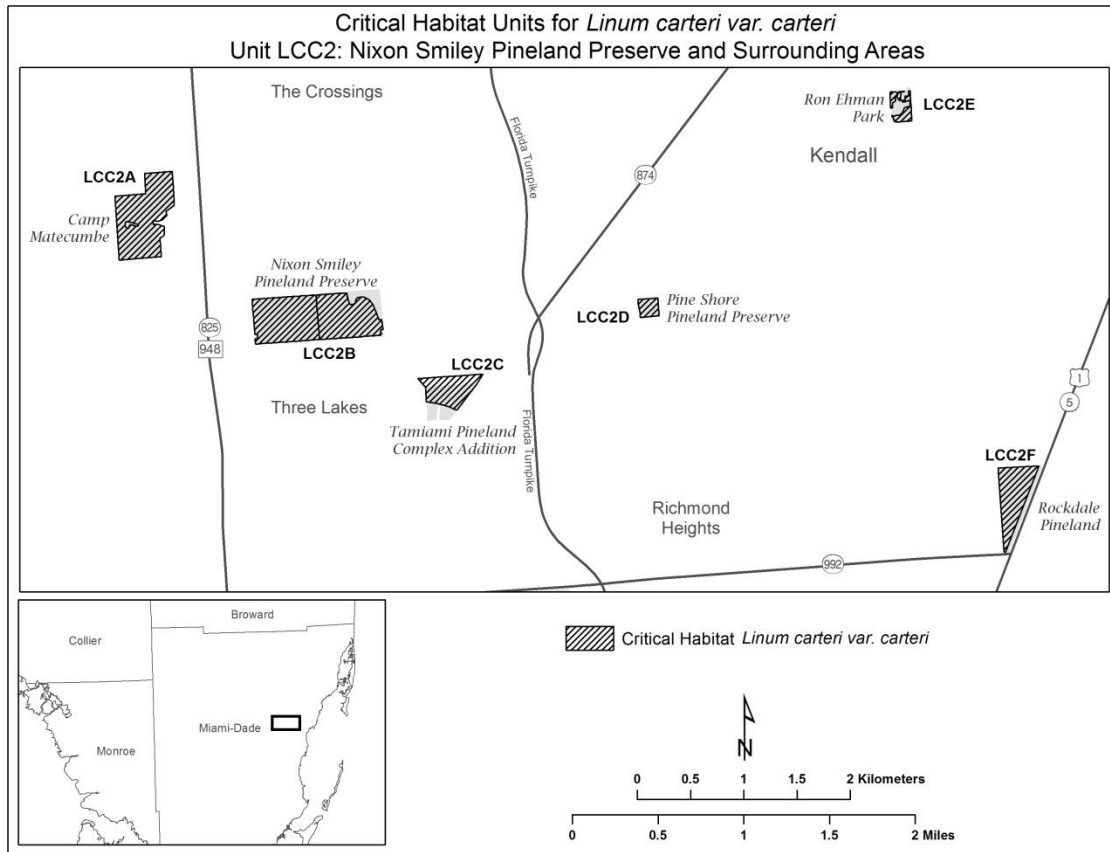
(5) Index map follows:



(6) Unit LCC1: Trinity Pineland and surrounding areas, Miami-Dade County, Florida. Map of Unit LCC1 follows:

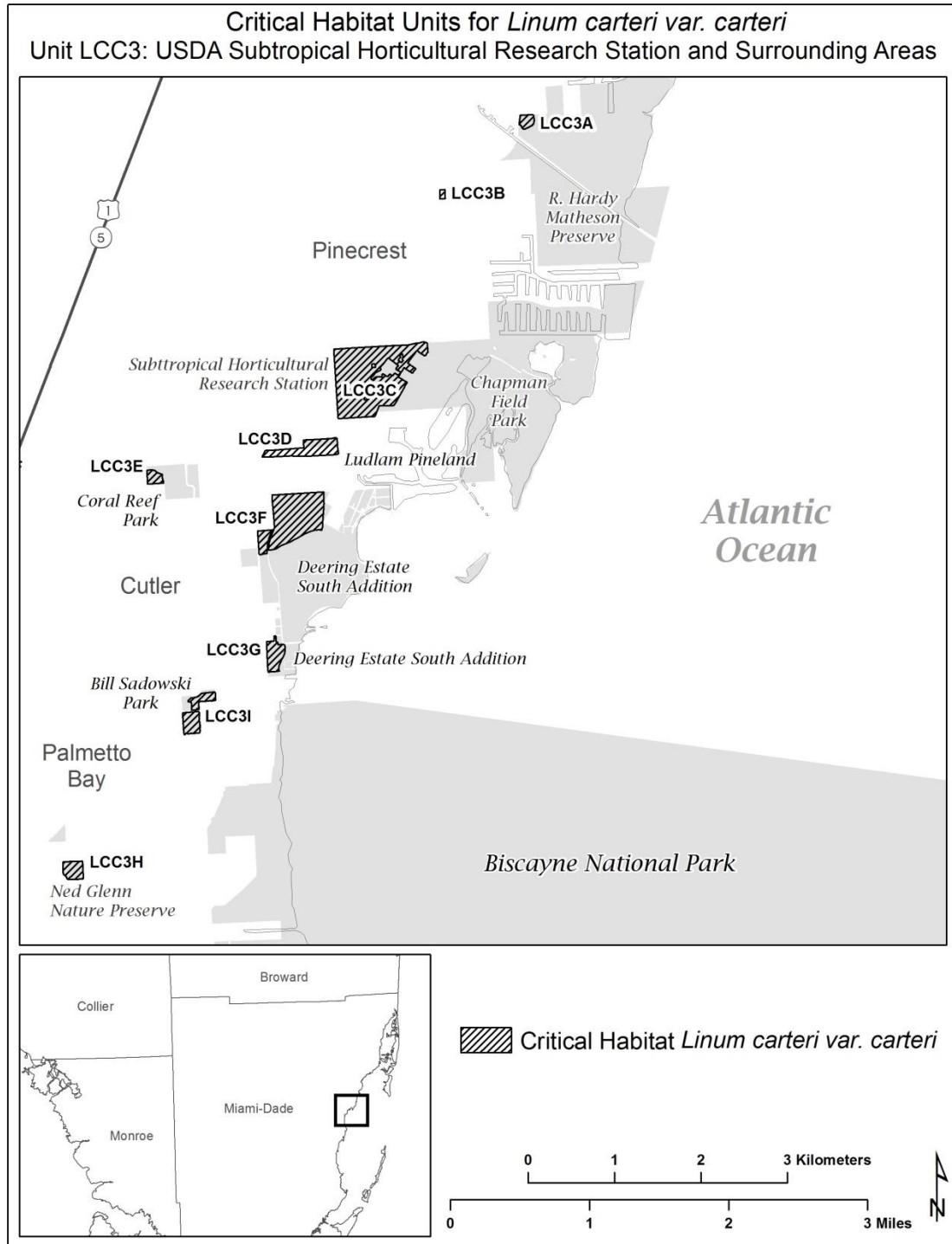


(7) Unit LCC2: Nixon Smiley Pineland Preserve and surrounding areas, Miami-Dade County, Florida. Map of Unit LCC2 follows:

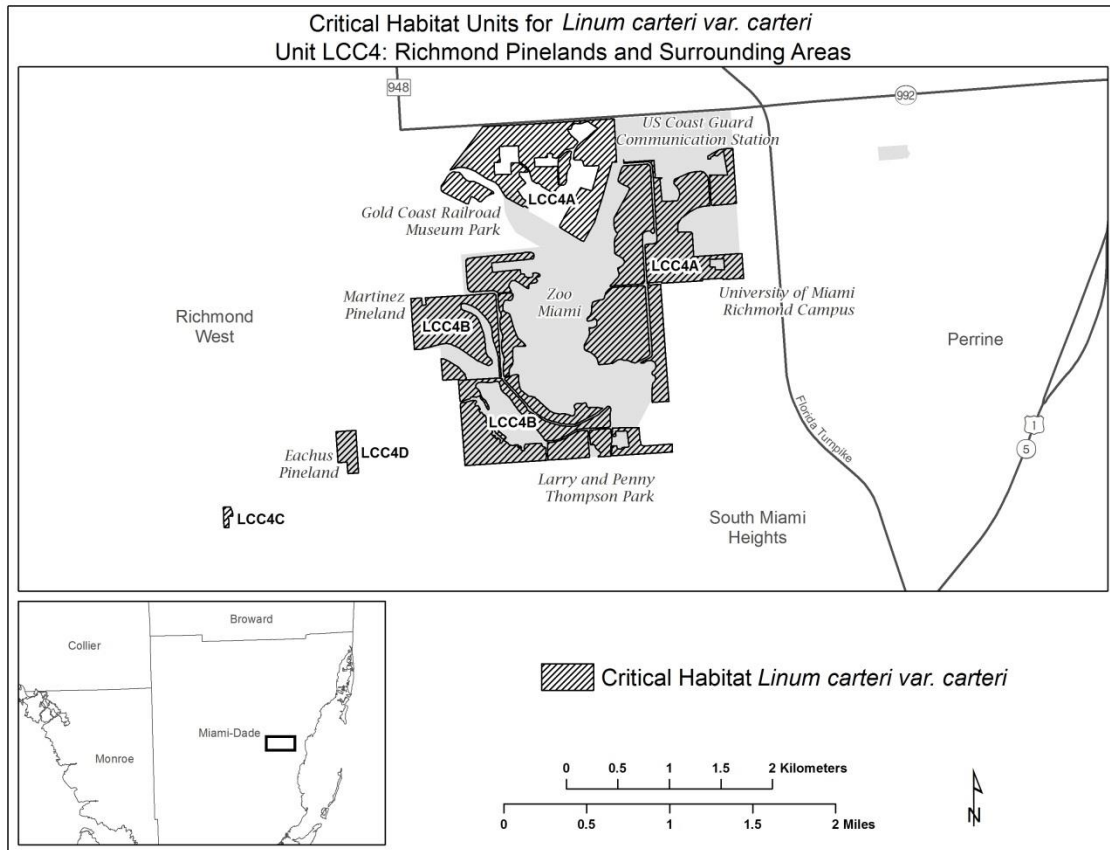




(8) Unit LCC3: USDA Subtropical Horticultural Research Station and surrounding areas, Miami-Dade County, Florida. Map of Unit LCC3 follows:

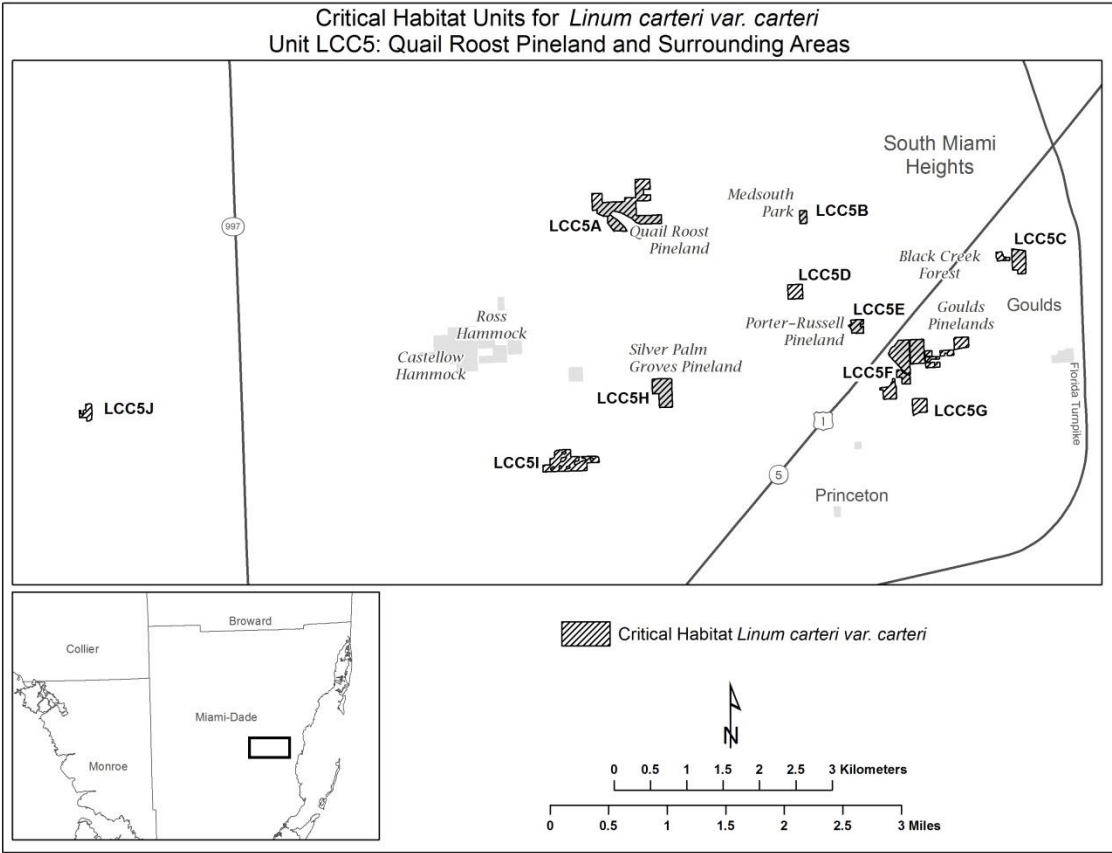


(9) Unit LCC4: Richmond Pinelands and surrounding areas, Miami-Dade County, Florida. Map of Unit LCC4 follows:



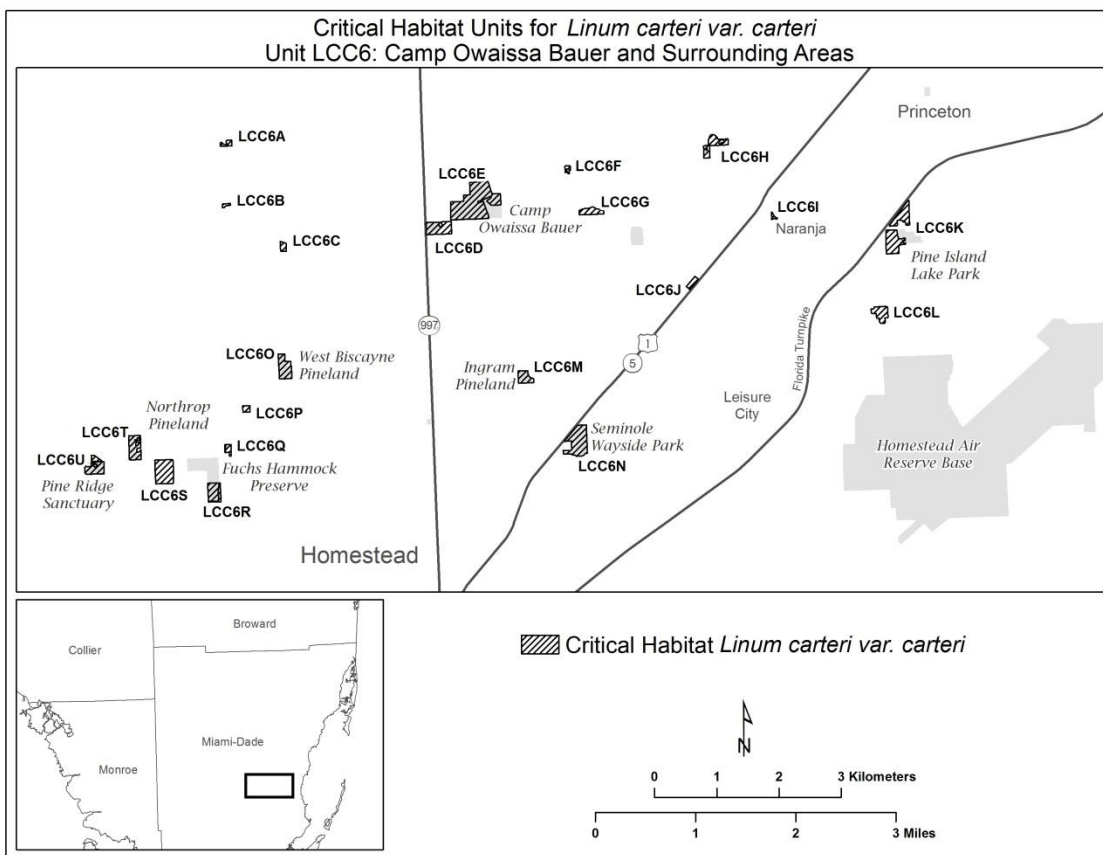
(10) Unit LCC5: Quail Roost Pineland and surrounding areas, Miami-Dade

County, Florida. Map of Unit LCC5 follows:

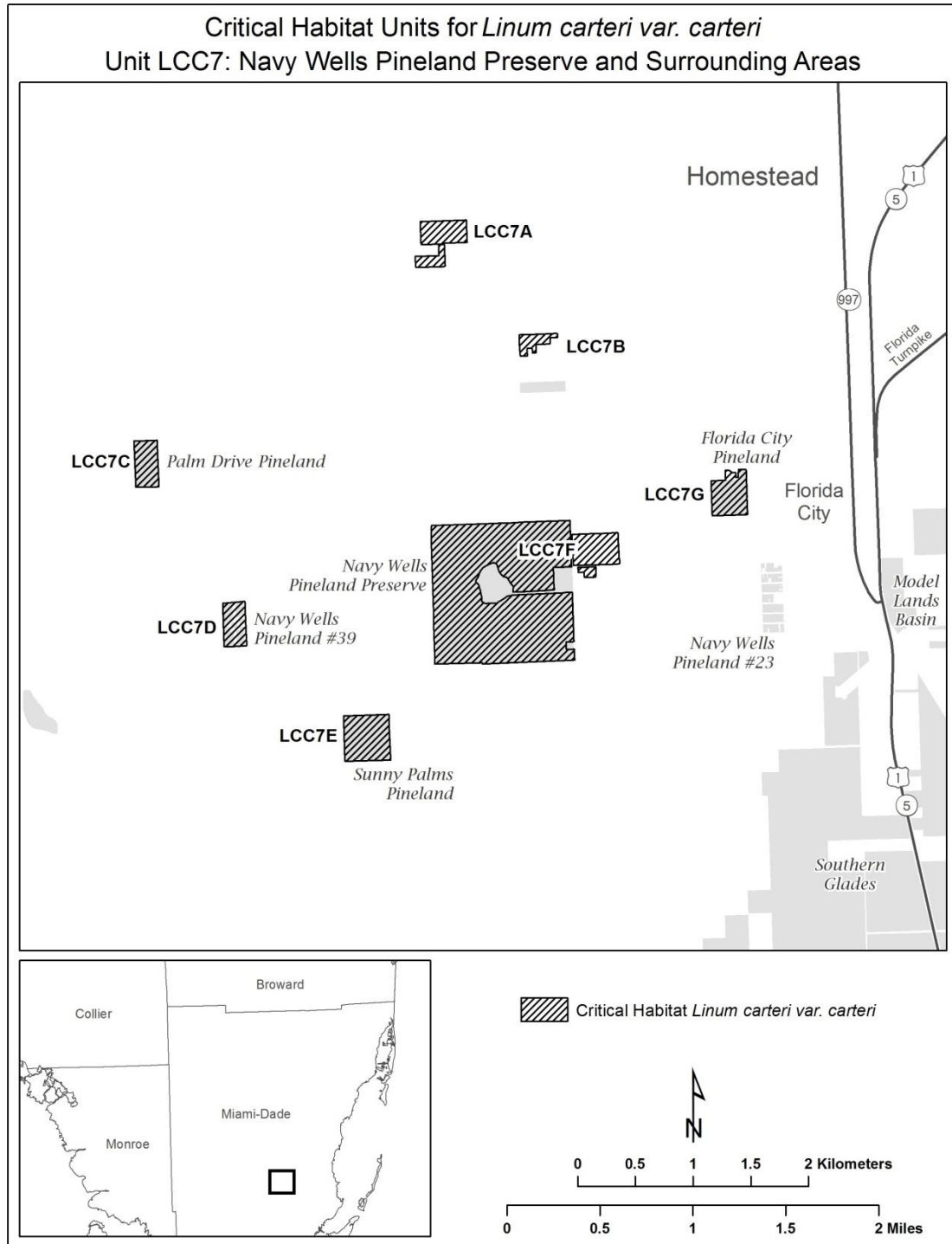


(11) Unit LCC6: Camp Owaissa Bauer and surrounding areas, Miami-Dade

County, Florida. Map of Unit LCC6 follows:



(12) Unit LCC7: Navy Wells Pineland Preserve and surrounding areas, Miami-Dade County, Florida. Map of Unit LCC7 follows:



\* \* \* \* \*

Dated: July 16, 2015

Michael Bean

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4310-55-P

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